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UNITED STATES DEPARTMENT OF AGRICULTURE

# FOREST SERVICE

~~S~~
~~Supervision~~
Lupnira

February 4, 1935

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ANNUAL STAND IMPROVEMENT REPORT - 1934

REGION 5

P. R. Kevin
Associate Forester

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Stand Improvement.
~~Supervision~~
Impnira
R-5

February 4, 1935

ANNUAL STAND IMPROVEMENT REPORT - 1934

REGION 5

Respectfully submitted:

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Stand Improvement
Impnira
R-5

February 4,1935.

# ANNUAL STAND IMPROVEMENT REPORT - 1934

## REGION FIVE

## I. INTRODUCTION

Practical cultural work in second growth stands in the California region prior to 1934 was a rather nebulous idea. Small crews from two CCC camps had done some thinning during the 1933 season, but only on an experimental basis. On October 15, 1933, three small impnira crews were started on projects under the direction of the California Forest and Range Experiment Station. Camps were established for two of these, and the third crew worked from their homes, being transported to and from the job by Government trucks. The two camps were closed after six week's work because of weather conditions. The third project was able to continue through the winter due to the light snowfall.

Early in 1934 the Branch of Forest Management took charge of all stand improvement activities in connection with a much enlarged program. Up to this time the field men in charge of the projects had only a general outline to go by. Methods and procedures had not been standardized. A much more definite set-up was needed, and conferences between the field men and the concerned personnel of the Experiment Station and the Branch of Forest Management led to the issuance of the hand book, "Instructions and Information concerning Stand Improvement Work, California Region", dated March 23, 1934. The table of contents for this manual is given below to indicate its general scope.

TABLE OF CONTENTS

Instructions and Information Concerning Stand Improvement Work
California Region


I. INTRODUCTION

II. GENERAL PRINCIPLES
- Area selection
- Stand selection
- Tree selection
- Spacing in young stands

III. CLASSIFICATION OF STAND IMPROVEMENT TREATMENT
- Cleaning
- Improvement cutting
  - Thinning
  - Liberation cutting
  - Sanitation cutting
  - Snag disposal

IV. ADMINISTRATION

V. GENERAL PRACTICES
- Marking
- Organization of field work
- Tools
- Special problems.
- Snag disposal
- Slash disposal

VI. RECORDS OF COST AND ACCOMPLISHMENT

VII. OUTLINE FOR A STAND IMPROVEMENT PROJECT PLAN

VIII. SUMMARY

APPENDIX:

A. Definitions of terms used
B. Project plans for representative stands:
   - Massack Area
   - Miners Ditch

Later, on April 27, a supplementary handbook was issued entitled "Instructions for Keeping Records of Costs and Accomplishments on Stand Improvement Work", which included sample forms.

During the year, 37,000 gross acres were treated in 23 projects on 7 National Forests.

II..

GENERAL PRINCIPLES

(A) Area Selection.

"The principal objective of improvement cuttings", quoting from Area Selection in the Manual, "should be the bettering of growing conditions for the most valuable species on the best and most accessible sites on cut-over areas in the National Forests. These will usually be in the ponderosa pine, sugar pine-ponderosa pine, and sugar pine-ponderosa pine-fir types.******* Only areas dedicated to timber production will be selected for treatment."

Young stands under a heavy reserve, understocked stands, reclaiming brushfields and stands composed entirely of inferior species were not to be treated.

The order of priority in selecting stands for treatment was:

(a) Stands not yet past the sapling stage. Here no distinction was made because of types. Later pure types where sufficient dominants were already distinguishable were assignod low priority, and preference was given to the mixed conifer type where the firs predominated but pine was abundant enough to stock a good portion of the area.

(b) Stands of scattered, defective, unmerchantable, old-growth trees that spread disease and impede or prevent the development of a young and vigorous stand. This condition is common on lands acquired through land exchange.

(c) Pole stands. Individual trees here are so large that cutting is expensive and fire hazard and insect menace become problems of considerable proportions.

It has been the policy to have the staff of the Forest concerned select the areas for stand improvement work, and submit a project plan and map to the Regional Office for approval. Due to general inexperience in this type of work, and to a lack of knowledge of the values and priorities involved, this policy could not be observed generally, and several projects were selected and

approved in the field by representatives of the Branch of Forest Management before maps and plans were prepared. As prompt unemployment relief was a major consideration at that time, this procedure was justified.

(B) Classification of Treatment.

(a) Cleaning is defined in the manual as "a cutting made in a stand not yet past the sapling stage for the purpose of removing trees of undesirable species or form, that are injuring, or are likely to injure, promising trees".

(b) Thinning is defined as "an improvement cutting in immature stands made for the purpose of increasing the growth rate of the remaining trees". The field practice was to classify work in all stands averaging less than 4 inches d.b.h. as cleaning, and if the average d.b.h. was 4 inches or over, as thinning. In many cases the areas thinned were so small and so difficult to segregate that the whole process was recorded as cleaning.

(c) Liberation cutting in this region during the past season consisted almost entirely of the removal of oak six inches in d.b.h. and larger. The cutting of smaller oaks was usually included in the cleaning or thinning costs.

(d) Sanitation cutting consisted of the removal of diseased trees. These were largely mature trees either showing evidence of disease, such as conks on white or Douglas fir, or shothole cups on incense cedar, or were, in the judgment of the marker, less than 50% merchantable. Insect infested pine were felled and treated when found, but the number was small compared to the totals. A few mistletoe infested pond pine were felled and a few treated by removing the infected limbs, but again the number was very, very small. The infected limbs of pine saplings showing mistletoe attack were removed; or if necessary, the sapling was cut down.

(e) Snag Disposal. All dead trees more than 12 inches d.b.h. and over 20 feet in height were felled.

(f) Slash Disposal, while not a type of treatment in the sense of the preceding items, is included here because it is grouped with true stand improvement items in the cost analysis.

The manual provided for treating slash so as to:

1. Restrict burned area to a minimum in case of a fire starting, and

2. Hold slash disposal costs to a minimum.

After several projects were well under way it seemed to be the consensus of opinion of all field men that the opening up of thickets, and the falling of snags more than offset the increased hazard due to slash on the ground. Slash disposal activities were then greatly reduced, and on most of the projects they were confined to piling, or removing, the slash from strips along traveled roads, with some clearing of lines on interior areas. These two items accounted for all of the expenditures in this classification on all projects except the Massack, on the Plumas Forest. This project ran continuously from October 15, 1933 to June 26, 1934. During the winter months most of the slash was disposed of immediately by burning. A small pitchwood fire would be started in an opening, and the green slash carried to it from the immediate vicinity. There was no difficulty at all with the burning but costs ran rather high. It is estimated that about one-fourth of the area was treated in this manner, and another one-fourth piled for fall burning, at a cost per net acre of about $9.00.

On other projects the chief aim was to get the slash as close to the ground as possible, and this was accomplished by lopping and scattering. It was advisable also to keep lopping to the necessary minimum in order to increase transpiration of slash material and thus hinder the development of insect broods.

Some criticisms of our timber stand improvement slash disposal methods have emanated from timber sale operators who have been required to pile slash. Only one fire occurred in stand improvement slash and this was clearly of incendiary origin.

(C) Tree Selection

1. The specific objects of tree selection are:

   (a) To increase the proportions of valuable species in the stand.

   (b) To improve the form and value of the crop trees.

   (c) To increase the final yield.

   (d) To secure the most rapid growth compatible with a full stand and good quality.

2. Spacing

The Instructions stated that "exact spacing of trees is usually impracticable and is not sought as an end in itself. The governing principle is to give each crop tree room to develop properly and to provide that the available growing space shall be utilized as far as possible by trees of desired species, form and condition".

A spacing table was included in the Instructions, to be used as a check on the field work. A close approximation of the table was obtainable by theapplication of this rule of thumb:- allow 6-foot spacing for (selected) trees averaging one inch d.b.h. and add one-half foot of spacing for each increase of one inch average d.b.h. Where trees average less than 4½ feet in height, the spacing should be roughly equivalent to the average height of the trees. The spacing table, based on height and d.b.h. was derived from composite curves for second growth stands prepared by the California Forest and Range Experiment Station.

(D) Cutting Regulations

The principles mentioned above were incorporated in one way or another in all of the project plans. They were simplified as much as possible so that the straw bosses and the cutters working under them would have a good, working idea of the results expected and the methods used to obtain them. The instructions issued on the French Creek Project are given below as a fair sample of these regulations:

"STANDARDS FOR THE FRENCH CREEK STAND
IMPROVEMENT PROJECT

PURPOSE:

To increase the proportions of valuable species and to secure the most rapid growth consistent with a full stand and good quality.

To obtain this result, the work should be done according to the following standards:

I. Selection of leave trees.
   A. Favor species in the following order: Sugar Pine, Ponderosa Pine, Incense Cedar and Douglas Fir.
   B. Individual trees shall be selected for leave on the basis of:
      1. Form and Vigor.
         Straight stems, length and breadth of crown, dense foliage, healthy appearance and rate of growth.

2. Ability to profit by release.
To fully occupy the available crown space in approximately 15 years. This result cannot be obtained by selecting leave trees under the canopy of larger non-cut trees.

C. Individuals growing on the outer edge of groups shall be favored if their removal would materially reduce the total crown space originally occupied by the group.

II. Removal of Trees

A. Cut only those trees interfering materially with the crown development of the selected leave trees. An interfering tree is one which occupies 1/3 or more of the living crown length of the selected tree, no sound pine, cedar or Douglas fir 12" d.b.h. or over, or sound white fir 18" d.b.h. or over shall be cut.

B. If the removal of an oak will liberate desirable trees, such oak shall be felled if in the judgment of the Camp Superintendent no more than 30% of the selected leave trees shall be seriously injured or destroyed.

C. All living trees unmerchantable because of defect or which will be source of infection or disease shall be tagged and felled.

D. Remove all snags over 12" d.b.h. and 20 ft. high.

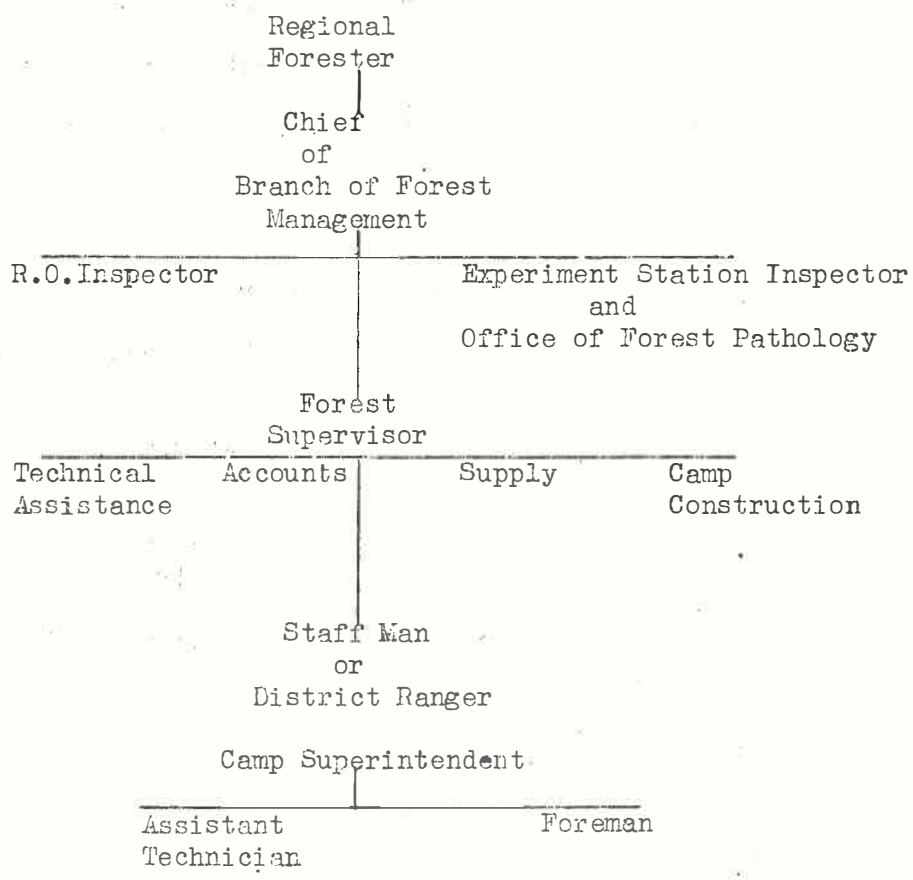
III. Slash Disposal.

The object of lopping is to get the slash as close to the ground as possible with a minimum of labor; therefore, only trees cut that are over 12 feet in height shall be lopped. Slash shall be removed from a strip 60 feet along used roads. Advantage will be taken of natural openings and light stands to break the area up into blocks of not more than 40 acres."

III.
ADMINISTRATION.

A. Administration Chart

Stand Improvement Work, Region 5




B. Organization of Field Work.

All but three of the project superintendents selected had Junior Forester qualifications and the three exceptions had had long timber sale experience. In almost every case the superintendent took part in the selection of the area on which he was to work. The earliest projects to be started served as training schools for superintendents, assistant to technicians and straw bosses and they were shifted about as occasion demanded.

The superintendent usually wrote up the project plan for the area, with the aid of his assistants. This plan outlined the purpose of the project, a description of the area, its history, the type of work to be done, the cutting regulations, crew organization, and where camps were proposed, camp organization and regulations. As mentioned previously, cutting began on some projects before the plan was completed.

For efficient organization it is necessary to have a good map of the area. We found that the best method was to run strips through the area, and outline the areas of reproduction on a base map. These areas were further subdivided on the basis of whether or not they would be benefited by working, and the classification of all units was indicated by symbols. A letter indicated the dominant species, a number the average height of the reproduction, and a plus sign (+) that treating was advisable. Heights were classified in 20 foot groups; 20 indicated an average height, falling between 3 and 20 feet, 40 from 20 to 40 feet, etc. Thus, P-20+ indicates a stand where pine is dominant, is less than 20 feet in height and which would be benefited by treatment. Later in the season an attempt was made to further segregate workable areas where two or more species were present, thus FP-20+ indicates a stand in which fir is dominant but in which pine will be dominant after cutting is completed.

The approved project plans also outlined the duties of all the personnel; a brief resume follows:

(1) Duties of Camp Superintendent:

(a) To have complete responsibility for all camp activities.
(b) To lay out work for crews.
(c) To inspect working crews at least twice daily.
(d) To authorize all orders for supplies or equipment.
(e) To supervise all cost and equipment records.
(f) To see that all progress reports and maps are kept up-to-date.
(g) To submit to the Forest Supervisor a monthly report of work accomplished.
(h) To submit reports and records necessary for forest fiscal and administrative purposes.
(i) To take charge of original action on any fires occurring on which such action is necessary.

(2) Duties of Technical Assistants

(a) To take active charge of a crew of 4 or 5 men on actual cutting and slash disposal operations; or
(b) To take care, at the discretion of the camp superintendent, of any or all of the duties listed below:

1- Run boundaries
2- Prepare progress maps and maintain them up-to-date.
3- Maintain cut and leave records.
4- Keep records of equipment, costs; make out time slips, etc.
5- Mark reproduction for cutting during training period of crew.
6- Mark bug and sanitation trees, snags, etc., to be felled.
7- Relieve camp superintendent of as much detail work as possible.

(3) Duties of Foreman

(a) To have active supervision of a cutting and slash disposal crew of 10 to 12 men, alternating when possible with technical assistants.
(b) To lead their crews during fire suppression work.

C. Technique of Field Work.

We were rather fortunate in the type of men we were able to hire for laborers, as the majority of them had had extensive woods experience. A surprising feature was the ease with which they grasped the principles of stand improvement and the interest they took in the results.

a. Training

The most satisfactory method of training the cutters was to start them in small groups in a marked st after explaining briefly the objects of the work. Two systems o marking have been used, the first, indicating trees to be left t e second, trees to be cut. The latter method probably gives the best final results, as it solves the so-called neutral-tree question immediately. After the men have cut in a marked stand for a day or so, each member of the crew should be asked to mark a small area for cutting. His superior should then inspect the job, and most important, question the marker thoroughly to see that he understands the principles involved. He should have a reason for everything he has done. The average crew is capable of doing a most satisfactory job in an unmarked stand after two weeks of such training. The question has been raised as to whether the time of a marker does not more than offset the periods of indecision in cutting in unmarked stands. We believe it does in crews recruited from men not of the woodsman type. If the men have had woodsman experience, continuous marking is probably unnecessary. One of the standards set up by the region, however, was that all stands averaging over 4 inches d.b.h. should be marked, and we believe that a continuation of the rule is advisable.

b. Cleaning and Thinning

Practically all of the cleaning and thinning work was done by unit crews, each in charge of a foreman or strawboss. The crews ranged in size from 5 to 12 men, usually dependent on the density of the stands to be worked. The foremen were ordinarily men of known ability. Many of them were selected from the ranks of the cutters. Areas were usually worked in strips, preferably up-hill, each man's territory varying from one-half to one chain in width. Little attempt was made to lay out definite strips, such as by compass line. Each crew was allotted a definite unit, sometimes, a forty, often determined by topographic boundaries. The customary

practice was to limb two sides of the tree to be cut as high as could be reached with the tool in use, and top it at about that same height while the tree was still standing, then cut it off at the base. This applies of course, only to the smaller trees, but it comprised the bulk of the slash disposal work done. Where the brush hook was the prevalent tool, there were also one or two axes to each crew to take care of the larger diameter trees. The foreman usually made it a point to check the area worked by his crew and if possible, correct mistakes. Sometimes a small follow-up crew was used for this purpose, and in one case the crews back-tracked over their last strip before starting a new one.

c. Checking

The quality of the work accomplished was judged by means of sample plots. They varied in size from one-twentieth of an acre to one-tenth of an acre, with a few considerably larger. At least one percent of the acreage of each type of stand worked should be sampled. The current procedure was to mark the corners of such a plot, and tally the trees within as to species, d.b.h., dominance and cut or leave. Neutral trees should be disregarded. When the cutters had completed work on this area a re-check was made and any variations from the standards set up would be apparent. It was a check not only on the selection of leave trees, but on spacing. It also became the practice to time the cutters on these sample plots to obtain the necessary time study data.

d. Sanitation Trees, Liberation Trees and Snags

On all of the projects there was sufficient work to keep one or more sets of fallers busy continuously. In nearly all cases trees over 12 inches d.b.h. to be felled were marked with a tag, giving species, diameter and reason for falling. Each night the fallers would turn in to the foreman or camp superintendent all tags from trees felled that day. A daily record was maintained for each set of fallers usually by total d.b.h. inches. The minimum allowable output in this region appears to be 450 inches per crew per day. Less than that usually led to reorganization. This daily output will vary, of course, with numbers of trees cut per acre, topography and character of ground cover, as well as with the average size of the trees ~~and character of ground cover~~, but these are all factors for which the camp superintendent can make rather accurate allowances. Daily totals of more than 900 inches have been reported several times from various crews. The average should be approximately 600 inches. The two-man falling crew was customary, but in some cases where the men were inexperienced it was necessary to place one skilled faller with two green men, not only from the standpoint of productivity, but as a safeguard to the lives of others in the vicinity.

Figure 1 indicates the curve resulting from a compilation of all snag falling data. It is based on total d.b.h. inches cut per acre, and man-hours falling time including the travel time between trees.

Figure 2 is a result of a study made on the Manuel project. It shows the increase in costs due to limbing, in addition to other data.

Where there was much work to be done in cutting large oak for liberation purposes, one or more falling crews would be assigned to that job exclusively. As some of these oak were as much as 40 inches in diameter, and overtopped pine thirty to forty feet in height, falling them with minimum damage demanded skilled work.

No further work was done on snags after they were felled but green sanitation trees and oak were limbed, and insected infested trees were limbed, peeled and treated.

e. Tools

The cutting tool most favored was the 4-pound Collins brush-hook. It was sometimes difficult to get an experienced woodsman to use one, but after a few days' trial he usually preferred it to an axe. It is much more efficient than an axe on trees up to three inches d.b.h. and in skilled hands is efficient up to six or eight inches. It is much safer to use, not only for the operator himself but also for his fellow laborers. It is also easier to keep dressed, as the point protects the cutting edge from rocks, etc. There was some difference of opinion as to type and length of handle, and some preferred a lighter head, three or three and one-half pounds. The latter of course, has a shorter cutting edge, thus reducing efficiency.

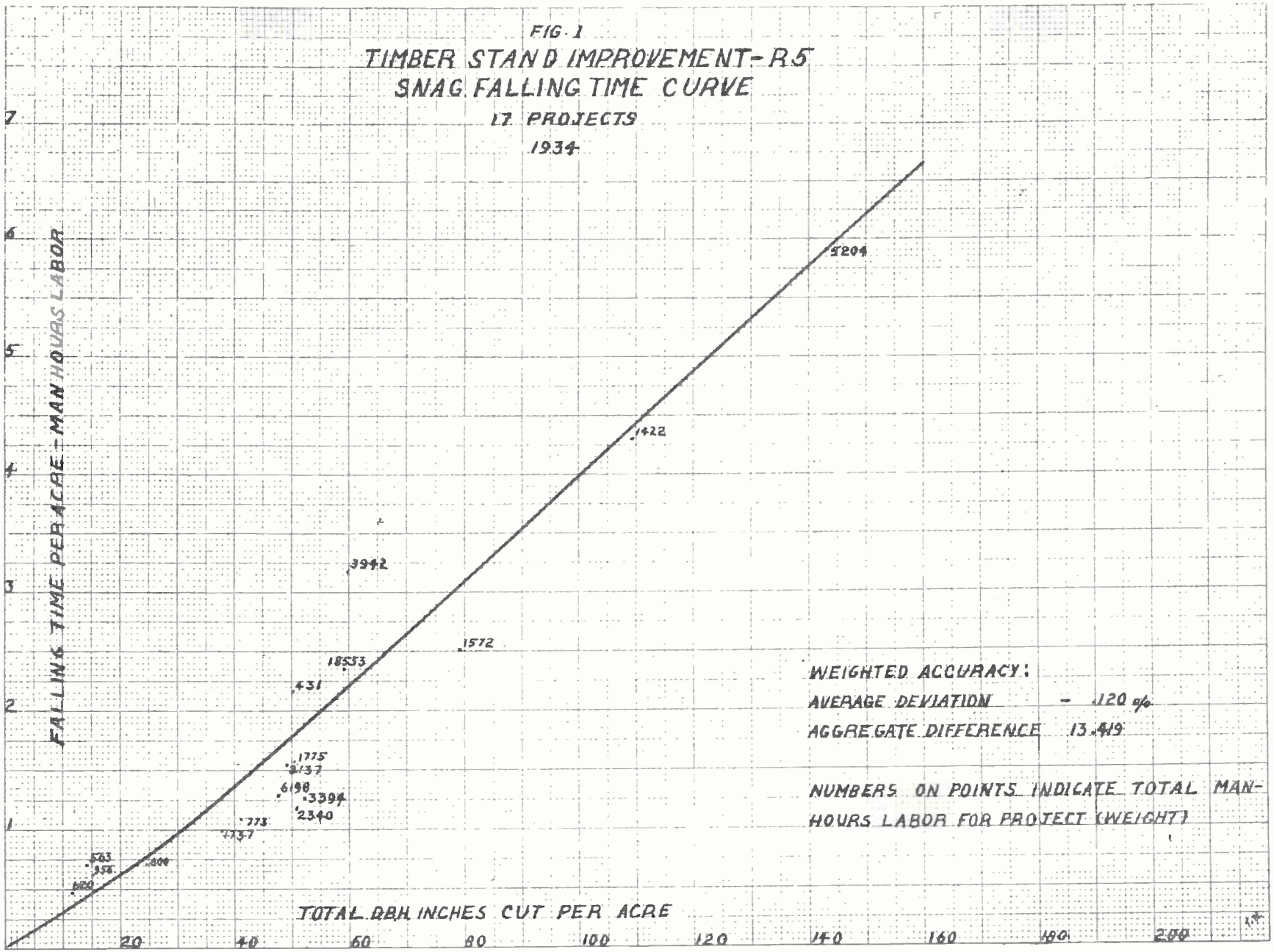
Figure 3 shows the relationship in efficiency between brush-hooks and axes as determined on the Logan Mountain Project, Lassen National Forest.

Sharp tools are one of the first prerequisites of effective work. In crews of twenty or more men it is advisable to have sufficient extra tools, and a tool-dresser, and to have the tools sharpened as needed. In any case the good workmen will touch up their cutting tools several times during the day and on some projects a definite period was set aside, morning and afternoon, for this purpose.

The bolo-type knife was tried out on one project but did not prove very satisfactory, although it might be of advantage in very young stands.

FIG. 1

# TIMBER STAND IMPROVEMENT - R5
## SNAG FALLING TIME CURVE
### 17 PROJECTS
### 1934



S. F.
June 2-7

Dear Ken:

Re our telephone conversation today:
Enclosed is a copy of Kerns stand improvement report for 1934. Table II following page 18 lists all classes of S & work by projects, from which the report for your files.

C E D

SNAG FALLING TIME PER ACRE
BASED ON 17 PROJECTS
(To accompany Fig. 1)

| Project | Acreage | Total No. of Trees | No Trees Per Acre | Average DBH, Ins. | Total Ins. Cut Per A. | Total Man Hours | M.H. Per A. Actual | M.H. Per A. Curved | Plus | Minus |
|---|---|---|---|---|---|---|---|---|---|---|
| Peach & Fig Growers | 1317 | 793 | .602 | 19.397 | 11.679 | 620.25 | .471 | .350 | | 34.57 |
| S. Warners | 800 | 432 | .540 | 26.000 | 14.040 | 563.00 | .704 | .430 | | 63.72 |
| Dawn (Brown) | 1550 | 996 | .643 | 23.845 | 15.323 | 955.75 | .617 | .460 | | 34.13 |
| Taylor Creek | 850 | 936 | 1.101 | 22.400 | 24.662 | 600.50 | .706 | .770 | 8.31 | |
| Carlson (Brown) | 1740 | 2934 | 1.686 | 22.832 | 38.000 | 1736.50 | .998 | 1.280 | 22.03 | |
| Meadow Valley | 704 | 1356 | 1.926 | 21.470 | 41.351 | 773.00 | 1.098 | 1.420 | 22.68 | |
| Pilgrim Creek | 4800 | 6260 | 1.304 | 36.567 | 47.683 | 6198.00 | 1.291 | 1.680 | 18.99 | |
| Ellis Meadow(Brown | 1400 | 2590 | 1.850 | 26.564 | 49.144 | 2137.25 | 1.527 | 1.690 | 9.64 | |
| Burnam | 200 | 421 | 2.105 | 25.020 | 50.040 | 431.00 | 2.155 | 1.780 | | 21.07 |
| N. Warners | 1135 | 3203 | 2.830 | 22.000 | 50.330 | 1775.00 | 1.564 | 1.790 | 12.63 | |
| Miners Ditch | 1972 | 4944 | 2.507 | 20.321 | 50.946 | 2340.00 | 1.187 | 1.820 | 34.78 | |
| Slaggar | 2680 | 4040 | 1.507 | 34.658 | 52.300 | 3394.00 | 1.266 | 1.870 | 32.30 | |
| Soquel | 7880 | 14,392 | 1.826 | 32.374 | 59.156 | 18,553.00 | 2.354 | 2.160 | | 8.98 |
| Manuel Est. | 1240 | 3420 | 2.758 | 21.721 | 59.908 | 3942.00 | 3.179 | 2.190 | | 45.16 |
| Massack | 628.5 | 2020 | 3.214 | 24.600 | 79.064 | 1572.00 | 2.501 | 3.030 | 17.46 | |
| French Creek | 330 | 1303 | 3.948 | 27.720 | 109.439 | 1422.00 | 4.309 | 4.380 | 1.62 | |
| Mohawk | 880 | 6517 | 7.406 | 19.350 | 143.302 | 5204.00 | 5.914 | 5.900 | | .24 |
| Totals | 30,106.5 | 56,557 | | | | 52,217.25 | | | | |
| Weighted Averages | | | 1.879 | 27.207 | 51.111 | | 1.734 | 1.825 | 5.248 | |

(To accompany Fig. 1.)

FIG 2

# TIMBER STAND IMPROVEMENT-R5

FALLING - FALLING AND LIMBING
TIME CURVES
FOR OAK LIBERATION
MANUEL ESTATE-STANISLAUS
1931

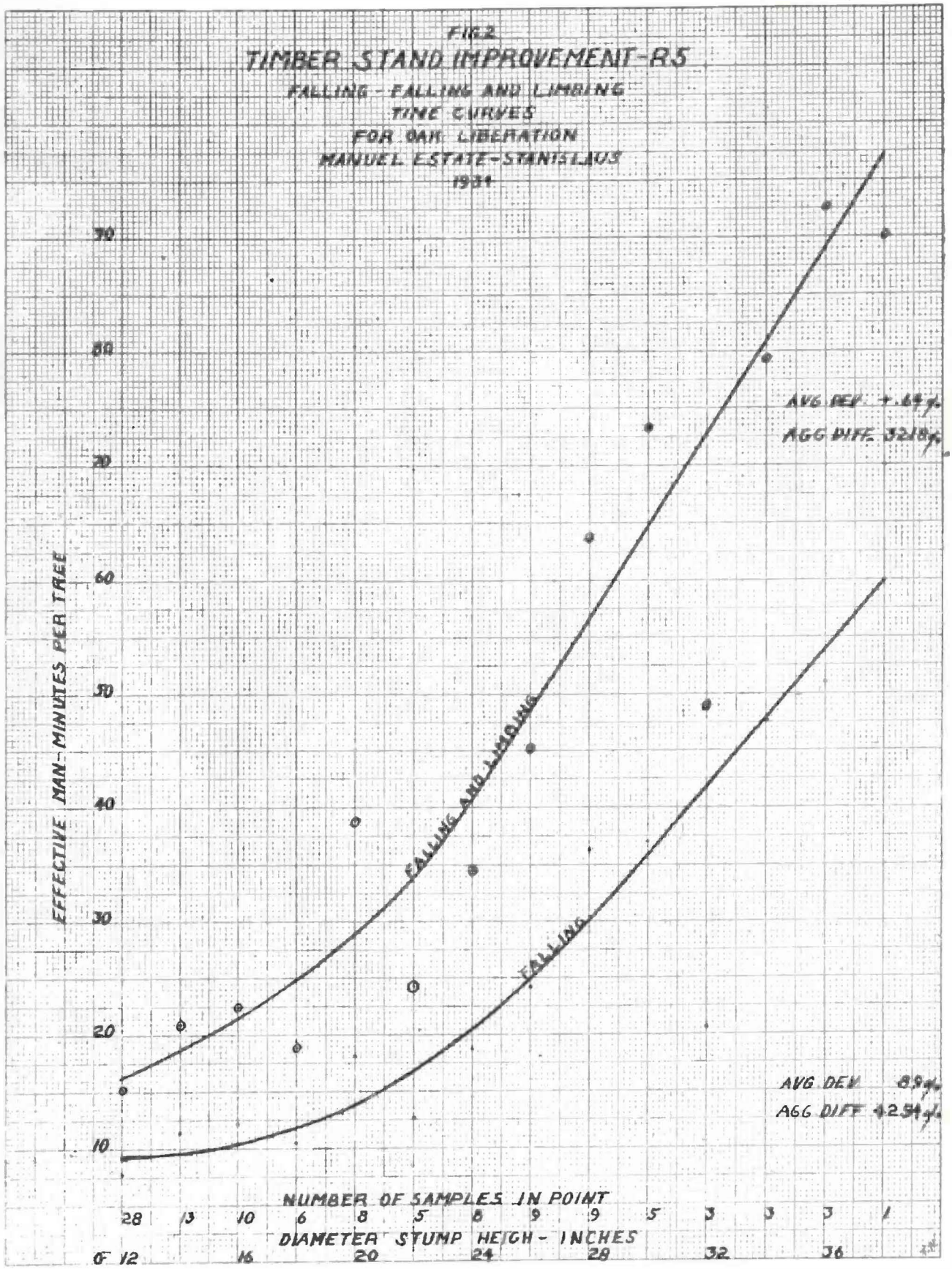


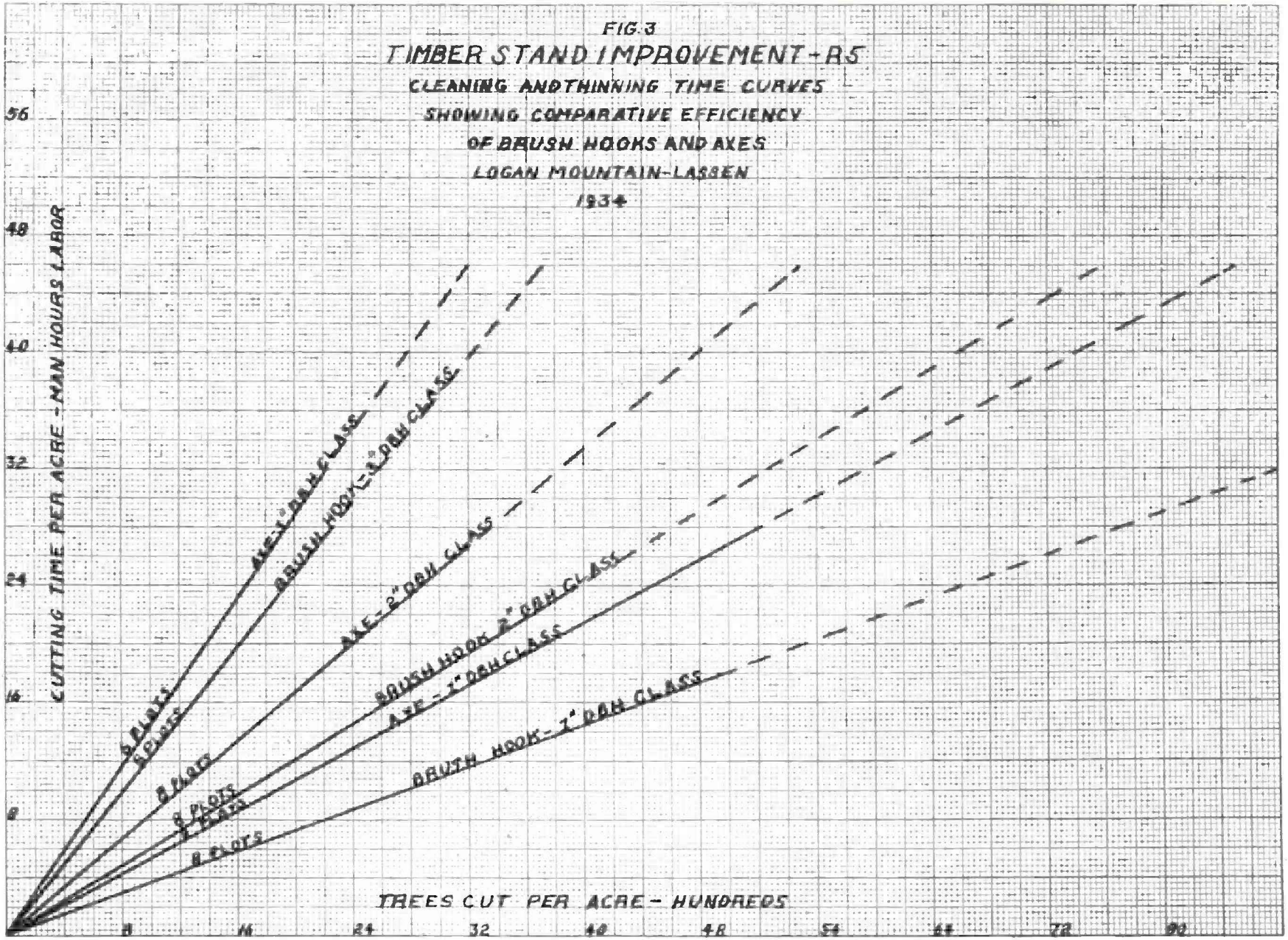
FIG. 3

# TIMBER STAND IMPROVEMENT - R5

## CLEANING AND THINNING TIME CURVES SHOWING COMPARATIVE EFFICIENCY OF BRUSH HOOKS AND AXES

LOGAN MOUNTAIN - LASSEN

1934



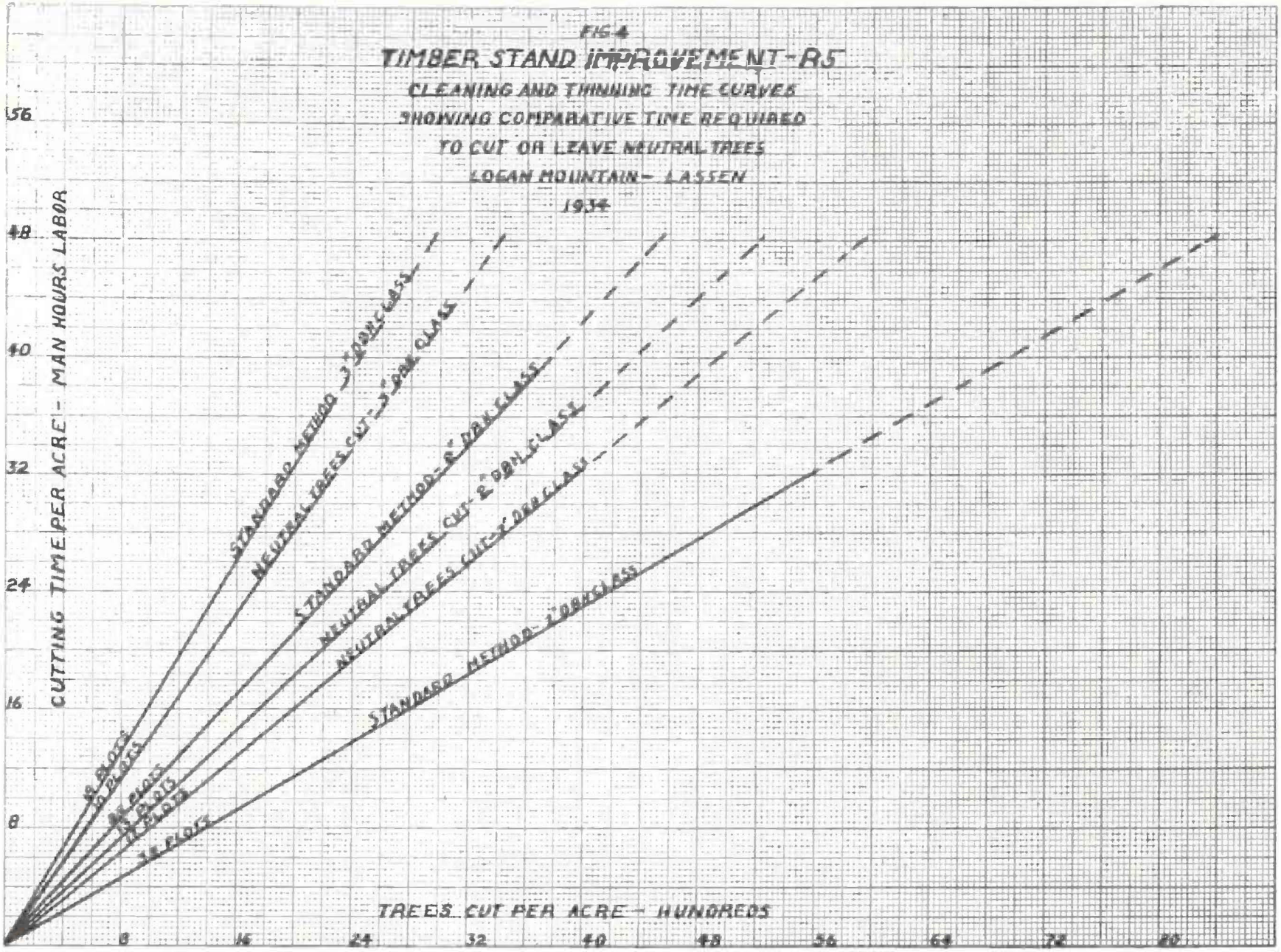


FIG 4
TIMBER STAND IMPROVEMENT - R5
CLEANING AND THINNING TIME CURVES
SHOWING COMPARATIVE TIME REQUIRED
TO CUT OR LEAVE NEUTRAL TREES
LOGAN MOUNTAIN - LASSEN
1934
CUTTING TIME PER ACRE - MAN HOURS LABOR
56
48
40
32
24
16
8
STANDARD METHOD 3" DBH CLASS
NEUTRAL TREES CUT - 3" DBH CLASS
STANDARD METHOD - 2" DBH CLASS
NEUTRAL TREES CUT - 2" DBH CLASS
NEUTRAL TREES CUT - 1" DBH CLASS
STANDARD METHOD - 1" DBH CLASS
4 PLOTS
10 PLOTS
8 PLOTS
16 PLOTS
14 PLOTS
TREES CUT PER ACRE - HUNDREDS
8
16
24
32
40
48
56
64
72
80

Pruning shears, did not obtain a very thorough tryout. Their chief drawback seems to be the amount of muscular force required to operate them. None of the triple-compound type were purchased, but they should receive a thorough trial, and they may be the answer to the neutral-tree problem, discussed under the next heading.

A short test was given to the portable gasoline-engine driven circular saw designed by Messrs. Curry and Morrow of the California Forest and Range Experiment Station. This machine works well on fairly level ground, where all but selected leave trees are to be cut. Its effectiveness is limited at present only by relatively steep slopes, excessive material on the ground and danger to the operators. Further tests will perhaps, prove its value on some types of stand improvement work.

f. Special Problems

1. Neutral trees

The slogan for all of our later cleaning and thinning work was "select a leave tree, then cut only interfering trees", but unfortunately this slogan was not featured until after considerable work had been done. The earlier system of cutting resulted in a park-like area, with selected trees left and everything else removed, and many of the key men obtained what little preliminary training they received, on this type of work. It is immediately apparent from the final slogan, that besides the selected leave trees and the interfering trees, there are a number of non-interfering trees called, for convenience, neutral trees. Interference is judged only on the relation of crowns, on the arbitrary basis that root development is proportional to crown development. The problem developed, and has not as yet been fully solved, as to how to remove all the interfering trees, and only the necessary minimum of neutrals. Some neutrals have to be removed to get at interfering trees, but the human tendency seems to be to cut everything but the crop trees, and it is very difficult in the field to determine just where the line should be drawn. It has been advocated that it is just as cheap to cut neutrals while working an area as to leave them. Several time studies were made in an attempt to clarify the matter but most of them were rather indecisive.

Figure 4 indicates the results found on the Logan Mountain Project. The curves seem reasonable in that the proportion of neutral trees to interfering trees will be higher in the small diameters and will decrease as the diameters increase. The subject needs quite a little more study before a hard and fast rule can be drawn. With the type of stands we have, and recognizing the natural tendency to cut neutrals, we doubt if

it is possible to set a diameter limit on one side of which neutrals should be cut, on the other left. The problem would probably be no nearer solution than it is now.

2. Oak Cutting

Oak was a minor problem on many of the projects. In most cases they were of comparatively small diameter. Several methods of treatment were tried. In clusters of sprouts, with individuals ranging up to six inches in diameter, the removal of all but one of the stems appeared satisfactory and little sprouting resulted. Young oak, still smooth-barked, sprouted strongly under a girdle, and also when chopped halfway through and bent over. Older, rough-barked oak did not sprout materially when girdled.

The larger oaks are undesirable, not only because they suppress more valuable trees, but also because of their mechanical interference with pine leaders. This latter effect continues for several years after girdling. Some of the larger oak were girdled, but the greater part of them were felled. Only two projects had much of an oak stand, but on these oaks as large as forty inches in diameter with a crown spread of sixty feet occurred, and overtopped an excellent stand of pin , from one to four inches in diameter.

3. Insect Infestation

The possibility of heavy insect attacks on stand improvement areas resulting from broods developing in the slash was a source of considerable worry early in the season. It was apparent that Ips were attracted to the down material, particularly of pole size, throughout the region. Progress of this infestation was watched closely, but due to the dry summer weather conditions here most of the slash dried out before broods had a chance to develop and as far as we now know only three small areas of standing trees on a treated area have been successfully attacked by Ips. Each area is less than 1/2 acre in extent and all are on the Burnam Area, within a half-mile circle.

No serious attacks by Dendroctonus brevicomis were noted but D. monticolae and D. valens invasions at one time appeared to be rather serious on one project. The following paragraphs and tabulation are quoted from the French Creek project report:

"On June 15th Dr. K. A. Salman of the Bureau of Entomology visited the French Creek project and discovered an apparently serious attack of Dendroctonus monticolae in the sugar pine leave trees of the area already worked. The infestation occurred in trees of 2 to 6 inches d.b.h., the beetles attacking

the trees at the base, rarely attacking over two feet above the ground.

"It was noted that sugar pine stumps were most heavily attacked and that most of the leave trees attacked were within one or two feet of the infested stumps and were not so heavily attacked as the stumps themselves.

"Nine infestation plots were laid out and tallied on June 21 and 22. These plots were each one-tenth of an acre in area and were distributed throughout the area covering both sugar pine and ponderosa pine types. The plots were re-checked at intervals throughout the remaining work period and a table showing the statistics and checks of these plots is submitted herewith.

"Later nine additional time study plots were tallied for infestation and checked at intervals. These plots have not been included in the table. Seven of these additional plots showed no attack whatever; one showed 9 sugar pine attacked by Ips and the remaining plot showed 2 sugar pine attacked by Dendroctonus monticolae and 4 attacked by Ips.

"On the nine plots included in the table a final check showed 5 sugar pine of 2 to 4 inches d.b.h. killed as a result of attack by Dendroctonus monticolae. The other attacked trees examined on this final check showed scarcely any larval development and the galleries of the parent beetles had begun to heal over like scars from any mechanical injury.

"The trees killed had died as the result of the girdling effect of the parent beetle attack.

"In trees of the small diameter of these under consideration, the gallery of the parent beetle follows a more or less spiral course in contrast to the vertical direction common on large infested trees.

"One point worth consideration is the cutting of low sugar pine stumps in the case of pine thinning, as the stumps seem to be an especially attractive field for attack. No extensive larval development was noted, however, in the stumps examined. "

## FRENCH CREEK STAND IMPROVEMENT PROJECT

### INSECT INFESTATION PLOTS

| Plot No. | Type Cut | Type Leave | Not Attacked SP | Not Attacked PP | Attacked SP | Attacked PP | Attacked by DM | Attacked by DV | Attacked by IPS | Average DBH Attack (All leave trees) | Average DBH (Trees) | Date Cut | Date Check | Increase Noted 7/5 | Increase Noted 7/12 | Increase Noted 8/6 | Increase Noted 9/3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | F-P | S.P. | 46 | 3 | 10 | 2 | 8 | 5 | 0 | 3" | 3.5" | 5/29 | 6/21 | 2 SP | 0 | 0 | 0 |
| 2 | F-P | PP-SP | 14 | 23 | 0 | 0 | 0 | 0 | 0 | 4.8" | 0 | 6/18 | 6/21 | 2 SP | 0 | 0 | 0 |
| 3 | F-P | PP-SP | 22 | 8 | 0 | 0 | 0 | 0 | 0 | 2.6" | 0 | 6/5 | 6/21 | 1 SP | 0 | 0 | 0 |
| 4 | F-P | S.P. | 52 | 4 | 21 | 1 | 17 | 3 | 2 | 2.7" | 4" | 6/7 | 6/21 | 0 | 2 SP | 0 | 0 |
| 5 | P.P. | P.P. | 0 | 107 | 0 | 0 | 0 | 0 | 0 | 3.3" | 0 | 5/30 | 6/22 | 0 | 0 | 0 | 0 |
| 6 | P.P. | P.P. | 1 | 75 | 0 | 6 | 1 | 3 | 2 | 4.1" | 5.7" | 5/28 | 6/22 | 0 | 0 | 0 | 0 |
| 7 | SP-PP | SP-PP | 21 | 50 | 1 | 0 | 1 | 0 | 0 | 2.7" | 2" | 6/4 | 6/22 | 5 SP | 1 SP | 0 | 0 |
| 8 | PP-O | P.P. | 2 | 74 | 0 | 0 | 0 | 0 | 0 | 4.1" | 0 | 6/15 | 6/22 | 0 | 0 | 0 | 0 |
| 9 | F-C | S.P. | 41 | 1 | 24 | 0 | 23 | 1 | 0 | 1.4" | 3.3" | 6/7 | 6/22 | 1 SP | 6 SP | 0 | 0 |
| | | | 199 | 345 | 56 | 9 | 50 | 12 | 4 | | | | | 11 SP | 9 SP | 0 | 0 |

P.P. = Ponderosa Pine (345 Ponderosa pineleft on plots, 9 attacked, none killed.)
S.P. = Sugar Pine (199 Sugar pine " " " 76 " 5 "
F. = Fir
C. = Cedar
O. = Oak

4. Fire Suppression

The majority of the projects were located on areas of relatively high fire hazard, but to the best of our knowledge, no stand improvement personnel were responsible for the inception of any fires. The crews were subject to call for fire suppression duty at any time, with the understanding that such labor time would not be included in the 30 or 40-hour week limitation set by NIRA. On projects where camps were established the initial policy was to hold small emergency crews, varying from 5 to 12 men, in camp over week-ends for fire duty and meals for that period were charged for at the regular rate. Later the policy was changed and no men who had been selected to be held for this assignment were charged for meals. At least half of the supervising personnel were expected to remain in camp over week-ends. The emergency crews were chosen from the working crews in rotation so that their period of duty seldom occurred more often than once a month. Of course the whole organization was available during particularly critical periods.

The wages of stand improvement men employed in actual fire suppression were paid from the Fire Fund if they were used for more than a few hours. We have no records immediately available to make an estimate of what this time amounted to. Wages paid for fire duty from stand improvement funds are included in the "Miscellaneous" item in the Collection of Proration Charges, Table D. The meals of emergency crews over week-ends are included in the "Number of Free Meals", item, Table D-2.

IV. DESCRIPTION OF PROJECTS

The stand improvement projects in this Region were scattered over an area approximately 350 miles long and from 50 to 75 miles wide, extending from the Modoc Forest in the north to the Sierra Forest in the south. This area has five commercially important timber producing species, sugar pine, ponderosa pine, incense cedar, Douglas fir and white fir. Their relative importance may be indicated by the minimum stumpage rates set up for the Forests concerned: sugar pine, $2.75 per M ft. B.M.; ponderosa pine, $2.00 and the remaining three 50¢ each per M ft. B.M. Of the latter three, Douglas fir and incense cedar vary from time to time in the relationship of their values, depending upon demand. The chief use of cedar is for pencil stock, for Douglas fir, construction material. Both are usually more desirable to operators than white fir, (Abies concolor) which recently has shown a negative appraisal value, though it has a specialized use in some plants as box lumber. Ponderosa pine and white fir occur in pure stands; sugar pine, cedar and Douglas fir are always in some combination with other species.

The objective set-up by this region, after some preliminary work, was to confine cutting operations as much as possible to mixed stands, particularly where the removal of

the so-called inferior species would increase the percentage of the pine in the stand and liberate pine for more rapid development. Table I gives a resume' of the change in composition resulting from cleaning and thinning on several of the projects.

Table II gives a general description of the common factors of the various projects. While twenty-two areas were treated, exclusive of work done by ECW crews, organizations were setup for only fourteen projects, as five organizations worked on two or more areas. Four camp moves were necessary, the outfit from the Peach Growers project moved to Dawn, and thence to Ellis meadows. Incidentally the data from three of the areas worked by this crew, (Dawn, Carlson and Ellis meadows), are combined in the cost analysis as one camp (Brown's). The Lasco camp on the Lassen moved to Logan Mountain and the Weber Camp on the Eldorado moved to Corral Flat. Of the non-camp projects, the Mabie crew moved to Burnam and thence to Meadow Valley, and the Massack crew moved to Taylor Creek. The Slagger Camp was practically a side-camp for Pilgrim Creek, having the same supervision. Projects were carried out on seven National Forests.

All laborers and strawbosses were recruited from local unemployment rolls, and little difficulty was encountered in their selection. Men on non-camp projects were limited to thirty hours a week, working either four days of seven and a half hours, or five days of six hours. Men employed in camps worked five eight-hour days a week. Unskilled labor was paid at the rate of .45 cents an hour. Semi-skilled labor, 55 cents an hour. Some projects rated all of their men as semi-skilled, others used the 45 cent rate for cutters regardless of experience. Strawbosses received .75 cents an hour and cooks $1.10 an hour.

## V. RECORDS OF COSTS AND ACCOMPLISHMENT.

A number of tables on costs are included in this report. They are based on data collected from the various project reports. They follow closely the standards set-up in the manual. The office work as well as the field work was an entirely new field to most of the superintendents and their assistants, and the technical overhead on most projects was insufficient. Nevertheless, we believe that the cost records are fairly accurate, especially as to the distribution of labor. The equipment items are rather complicated. Tents, kitchen ranges, mess equipment, cots, mattresses, stoves, etc. were purchased for some projects. Other camps were furnished by the Forests from inactive equipment, such as that purchased for NIRA road projects. The same holds true of motor equipment, some was purchased, some furnished by Forests, and some was rented. As it is difficult to segregate these items, none of them have been included in these cost figures except rented trucks. On the other hand, all of the "Small Tools" items is included, although only their depreciation is a legitimate charge. It is estimated that the inclusion of this entire item will offset the depreciation charges of the aforementioned equipment.

S
Stand Improvement

TABLE II

2/4/35

PERTINENT DESCRIPTIVE DATA FOR STAND IMPROVEMENT PROJECTS 1934.

| Camp Projects | Forest | Gross Acreage | *Ownership At Time Of Logging | Logged In | Elevation | Timber Type | Site | **Relative Density Of Reproduction | ***Type Of Work | Period Of Work | No. Men | Area Remaining To Be Worked Gross A. | Net A. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Soquel | Sierra | 7880 | Private | 1874-1895 | 4500-7000 | PP-SP-IC-WF | I-II | - | 5,3,1,4,6 | 4/18-9/28 | 30-80 | 1600 | 200 |
| 2-Pilgrim Creek | Shasta | 4800 | Private | 1908-1911 | 4000-5000 | PP-SP-DF-IC-WF | I-II | Heavy | 5,1,2,3,4,6 | 5/15-9/14 | 25-50 | Completed | |
| 3-French Creek | Plumas | 330 | Private | 1912-1916 | 3000-3800 | PP-SP-DF-IC-WF | I-II | Heavy | 1,2,6,4,5,3 | 5/28-9/7 | 20-60 | | 390 |
| 4-Logan Mt. | Lassen | 1296 | Govt. | 1927-1929 | 6000-6500 | PP-SP-WF-IC | III | Medium | 1,6,5,2 | 5/15-10/31 | 40 | Completed | |
| 5-Miners Ditch | Stanislaus | 1983 | Govt. | 1920-1926 | 5000-6000 | SP-PP-IC-DF-WF | I-II | Light | 1,5,2,4,3 | 4/13-8/31 | 30 | Completed | |
| 6-Browns | Sierra | 4690 | Govt. | 1900-1933 | 4300-6800 | PP-SP-DF-IC-WF | II-III | Light | 5,1,2,3,4,6 | 6/3-8/24 | 30 | Completed | |
| 7-Meadow Valley | Plumas | 1010 | Govt. | 1916-1923 | 3800-5100 | PP-SP-DF-IC-WF | II-III | Medium | 1,2,5,4,3 | 7/1-8/29 | 40 | 1150 | 350 |
| 8-Peach Growers | Stanislaus | 1317 | Govt. | 1918-1924 | 4200-4800 | PP-SP | II-III | Medium | 1,2,5,3,4 | 4/10-6/7 | 30 | Completed | |
| 9-Lasco | Lassen | 2230 | Govt. | 1918-1926 | 5200-5500 | PP-JP-LP | III | Medium | 1,6,5,4,3 | 5/25-7/15 | 25 | Completed | |
| 10-Slagger | Shasta | 2680 | Private | 1912-1914 | 4500-5000 | PP-SP-DF-IC-WF | II | Heavy | 5,3,2,1 | 7/1-8/31 | 30 | 5000 | 245 |
| *****Weber | Eldorado | 880 | Priv. & Govt. | 1924-1931 | 4500-5500 | PP-WF | II-III | Medium | 1,5,3,6,4 | 4/16-6/20 | 20 | Completed | |
| *****Corral Flat | Eldorado | 1000 | Govt. | 1929-1932 for Xmas trees | 6000-7500 | RF-LP | I-II | Heavy | 1,5,3 | 6/20-8/20 | 30 | Completed | |
| *****Rousch Mill CCC | Sierra | 1620 | Govt. | 1923-1930 | 5500-6400 | SP-PP-WF-IC | II-III | Light | 5,1,3 | 7/1-9/1 | 2-15 | 1700 | 500 |
| Non Camp Projects | | | | | | | | | | | | | |
| 11-Massack | Plumas | 600 | Govt. | 1909-1915 | 4000-5000 | PP-SP-DF-IC-WF | II | Heavy | 1,6,5,3 | 10/15/33-6/26 | 15 | Completed | |
| 12-Manuel | Stanislaus | 1240 | Private | 1900-1910 | 3300-4700 | PP-SP-WF | II | Medium | 4,5,1,3 | 6/18-9/28 | 30 | Completed | |
| 13-N. Warners | Modoc | 1135 | Govt. | 1909-1933 | 5200-6000 | PP-IC-WF | III | Heavy | 1,5,3,2,4 | 6/22-9/15 | 25 | | 595(P) |
| 14-Taylor Creek | Plumas | 850 | Govt. | 1916-1922 | 4000-5000 | PP-SP-DF-IC-WF | II | Medium | 1,5,3,6 | 6/26-8/13 | 40 | | 500 |
| 15-S. Warners | Modoc | 800 | Priv. & Govt. | 1909-1930 | 6200 | PP-IC-WF | III | Medium | 2,3,5,6 | 6/27-8/20 | 25-30 | | 180 |
| 16-Mohawk | Plumas | 880 | Private | 1922-1923 | 4500-5500 | PP-SP-DF-IC-WF | II-III | - | 5,3 | 7/2-8/13 | 40 | 1200 | |
| 17-Mabie | Plumas | 394 | Govt. | 1902 (Trespass) | 4500-4700 | PP | III | Medium | 1,6 | 3/8-5/10 | 15 | Completed | |
| 18-Burnam | Plumas | 200 | Govt. | 1909 | 5200-5600 | PP-IC | III | Medium | 1,5,6 | 5/14-6/21 | 14-20 | Completed | |

* Private lands have been acquired since logging through exchange.
** For comparison of projects. All were sufficiently stocked to benefit by cleaning and thinning.
*** 1 - Cleaning; 2 - Thinning, 3- Sanitation; 4 - Liberation; 5- Snag Disposal; 6 - Slash Disposal. Order based on largest percentages of total project costs.
***** Projects are not numbered as complete data on costs was not available. The numbers for the other projects correspond to those appearing in the Cost Analysis Tables.

Table A gives a summary of a breakdown on a cost per gross acre basis. Some of the subtotals in the actual costs column do not check with entries in other tables. This is accounted for by the fact that one project in each classification gave a total proration charge without a further segregation. Those charges have been prorated in this table on the percentages shown in the "proration charges" table. (D.)

Table B is a summary of total costs by major activities. The data were taken from Form ICR-12 for each project, and are otherwise self-explanatory.

Table C is a summation of the total direct charges for the six major activities and is derived from tables C-1, 2, 3, 4, 5 and 6. Acreage costs are based on gross acres. Costs per effective man hour are based only on direct labor charges, not including direct supervision, marking, or checking.

Tables C-1, 2, 3, 4, 5 and 6 show a segregation of charges for each activity, respectively. Per acre costs are based on net acres for cleaning and thinning, gross acres for the other activities.

Table D gives the collection of proration charges by activities. It is based partially on Tables D-1, 2 and 3. The "transportation" item refers only to the moving of labor to and from the job. Trucks were rented on four projects, two at Meadow Valley, two at Mohawk and one each at Soquel and French Creek, and the charge is entered under this heading. Trucking costs for camp construction and moving, and for subsistence, are included in their respective sub-heads.

The miscellaneous item covers minor road construction or maintenance, annual leave, sick leave, time spent in caring for injured, etc. and the amounts spent for clerk hire in the supervisor's offices. The "Distribution" is based on the percentage of net man hours for the various projects.

Table D-1 compares the Camp Housing costs for the various projects. "Materials" covers the purchase of lumber for floors and frames, plumbing supplies, etc., but does not include costs of tents.

Table D-2 is the itemized subsistence charges by projects. The "number of meals not paid for" includes those served to visiting Forest Officers as well as those given to laborers on emergency fire call. The final costs do not include any charges for mess hall construction or depreciation, or for mess hall equipment.

Table D-3 - "General Supervision", is not exactly representative, as some of the activities were carried out on contributed time by the permanent personnel, particularly the area selection, project plan, and project report classifications, and no charges have been entered in these costs for contributed time. The superintendent of the Soquel Project is a member of the permanent organization, as was the man in charge of the Mabie oject, and the salaries of neither have been included in these records.

The general supervision item should have been charged to direct supervision on the several activities, but most of these charges were incurred before the present cost system was initiated.

## VI . RESULTS OF TIME STUDIES

Much of the time of the technical supervising personnel on many of the projects was taken up with necessary field and office work and such special studies as were undertaken were squeezed in here and there. We believe it advisable on future projects to use a man with some clerical experience to handle routine work, such as time keeping, etc., and leave technical men free for other duties.

One of our primary objects of study was to determine the relationship between man-hours cutting time and the various diameter classes. This was somewhat difficult to obtain due to the spread between diameter classes on any one plot. Some such curves have been obtained on several projects, but the data will require considerable reworking and analysis before curves can be obtained from which fairly accurate predictions may be made. Our intention is to utilize the insufficient data we have, to organize curves based on diameter, density, and cutting time, the chief purpose of which will be to serve as a guide for future studies.

Figure 5 shows a curve based on total d.b.h. inches, all diameters, cut per acre, and man-hours cutting time. The accompanying table gives some of the pertinent data concerned.

The results of other time studies are shown in Figures 1, 2, 3 and 4.

## VII . CONCLUSION

It is difficult to make a comparison of the results of stand improvement work on the various projects, or to criticize high costs or commend low costs. So many factors enter into the question that each project was almost in a class by itself. A discussion of sanitation tree and snag disposal costs is probably unnecessary. Differences are due to size of tree, number of trees per acre, character of ground cover and topography. Cleaning and thinning cost variances seem to be due to four main factors. The first one is whether the areas were logged under government supervision or not. The Forest Service policy is to leave a reserve stand on their timber sale operations. This not only has an effect on the amount and density of reproduction, but the area to be treated by cleaning and thinning is reduced by an amount equal to the area covered by the crowns of the reserve trees.

The other three factors are site, the period since logging, and type of reproduction, that is, whether it is mixed conifer or predominantly pine.

A simple way to state this is that treating costs per acre vary directly with basal area, but we do not have the necessary data for a segregation on this basis. The four factors mentioned, however, can be used for a rough classification.

Of the eighteen projects on which we have itemized costs, six were located on lands acquired by exchange, all classified as Sites I and II. Pilgrim Creek and French Creek were essentially mixed conifer stands; Manuel chiefly pine reproduction; Slagger, Soquel and Mohawk were mainly sanitation tree and snag disposal jobs but fall in the mixed conifer classification. The logging on all of these areas except Mohawk was done twenty or more years ago. There were no projects in a Site III classification on acquired lands.

On lands logged under government supervision, six projects fall in the Site I and II classification, Peach Growers, Brown's, Taylor Creek, Meadow Valley, Miner's Ditch and Massack. Only the first was principally a pine type, and only the last has been logged twenty years or more. The remaining six projects are classified as Site III or lower. Mabie and Burnam, pure pine type, over twenty years old; North Warners and Lasco, pure pine, logged less than twenty years, South Warners and Logan Mountain, mixed conifer, logged less than twenty years. French Creek probably had the heaviest continuous stand of reproduction and their net acreage treated was almost equal to the gross area. Brown's Ellis Meadows Camp had the lightest stand, and there too , the net acreage and gross acreage were about equal. French Creek and Manuel had the major oak problems and on French Creek in addition, all leave trees on the treated areas were marked. On the Mabie project, all trees to be cut, were marked.

As a brief summary of accomplishment, 37,000 gross acres were treated by 23 projects on 7 National Forests. An itemized cost record was maintained for eighteen projects covering 34,315 gross acres, of which 10,821 acres or 31.5% were cleaned, and 866 acres of 2.5% were thinned. Of the total direct charges, 50.5% was spent for cleaning and thinning. To the total itemized cost of $162,119.35 should be added $14,977.73 expended in the purchase of major equipment such as trucks, tents, etc., giving a total of $177,097.08. Already included in the itemized cost total is an estimated expenditure of $15,629.37 for purchase of material, supplies and small equipment. This, added to the major equipment item indicates a non-labor charge of $30,607.10, which is 17.3% of the total, $177,097.08. It is estimated, therefore, that 82.7% of all expenditures was paid for labor. A short financial statement is given below.

COMPARATIVE CUTTING TIME PER ACRE
ACTUAL AGAINST CURVED VALUES FOR AVERAGE TIME STUDY PLOT
(To accompany Fig. 5)

| Project | No. of Samples | Total Plot Area A. | Avg. DBH Cuts | No. Trees Cut Per A. | DBH, Ins. Cut Per A. | M.H. Per A. Actual | M.H. Per A. Curved | Difference Plus | Difference Minus | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| French Creek* | 17 | 1.80 | 2.29 | 1284 | 2939 | 37.95 | 34.90 | % 8.7% | | |
| Manuel Est.* | 15 | 1.50 | 1.80 | 838 | 1511 | 22.72 | 28.60 | 20.6 | | |
| Black Fox* | 14 | 1.40 | 3.51 | 1081 | 3797 | 49.06 | 44.30 | | 10.7 | P 40+ |
| " " * | 17 | 1.65 | 1.40 | 1526 | 2144 | 23.03 | 25.80 | 10.7 | | P 20+ |
| " " * | 31 | 3.05 | 2.18 | 1325 | 2890 | 34.79 | 34.20 | | 1.7 | Average of P 40 & P 20 |
| Bumble Bee* | 31 | 3.10 | 1.16 | 645 | 750 | 9.20 | 10.00 | 8.0 | | |
| Peach & Fig* | 11 | 1.30 | 2.27 | 895 | 2035 | 19.90 | 24.50 | 22.4 | | |
| Logan Mt.* | 18 | 2.65 | 2.13 | 842 | 1797 | 18.04 | 21.30 | 15.6 | | |
| Ellis Mead.(Brown) | 5 | 101.00 | 3.30 | 24 | 79 | 1.30 | 2.50 | 48.0 | | |
| S. Warners | 15 | 1.50 | 3.51 | 285 | 1000 | 17.90 | 12.80 | | 39.8 | |
| Soquel+ | 3 | - | .81 | 719 | 582 | 8.33 | 8.10 | | 2.8 | Clean. (Size of Plots |
| " | 2 | - | 4.20 | 99 | 416 | 3.00 | 6.20 | 51.6 | | Thinn. not given) |
| " | 5 | - | 1.22 | 818 | 998 | 11.33 | 12.70 | 10.8 | | Sum of both. |
| Lasco | 17 | 1.70 | 1.67 | 1014 | 1697 | 9.66 | 20.70 | 48.6 | | (Data from graphs hence |
| Burnam | 15 | 2.325 | 3.07 | 920 | 2823 | 17.30 | 33.40 | 48.6 | | (DBH inaccurate. |
| Meadow Valley | 18 | 1.225 | 1.74 | 711 | 1234 | 11.26 | 15.50 | 27.4 | | |
| Massack*+ | 19 | 1.618 | .56 | 4372 | 2461 | 27.13 | 29.20 | 7.1 | | |
| Taylor Creek*+ | 31 | 1.600 | .60 | 2849 | 1701 | 20.22 | 20.80 | 2.8 | | |
| N. Warners | 18 | 1.80 | 1.47 | 4127 | 6037 | 42.25 | 70.00 | 39.0 | | |
| Weighted Averages** | | | 1.77 | 1530 | 2188 | 22.97 | 26.20 | 12.32 | | |

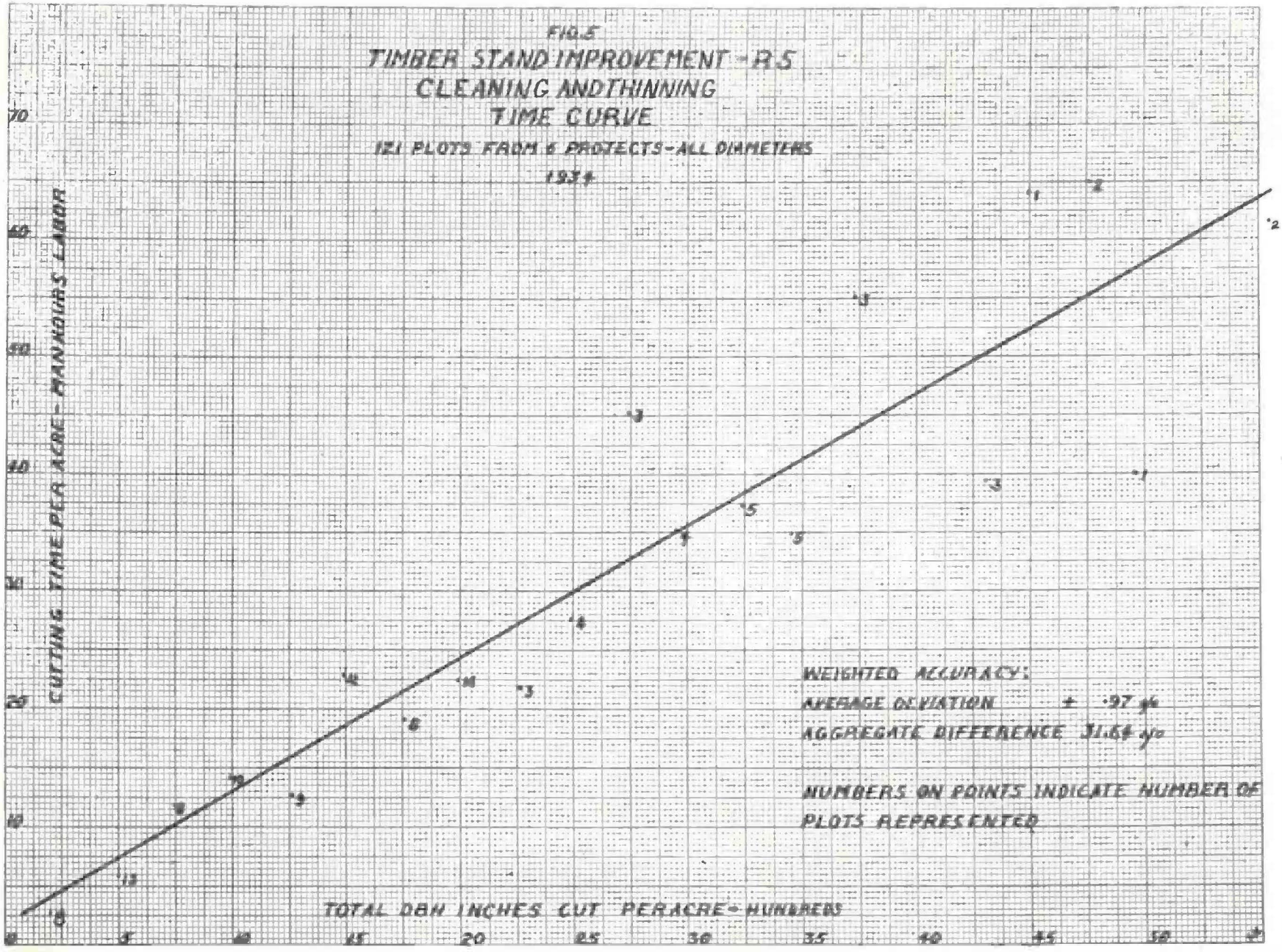
*Included in curve.
+Not on Per Acre Basis, but proportion holds.
*+All plots with Avg. D.B.H. of less than .25" raised to .25".) Original data not available; hence lower D.B.H.'s are too low.
**Excludes Ellis Meadow, Soquel, and Lasco. Area times number of plots used in weighting.

FIG. 5

# TIMBER STAND IMPROVEMENT - R.S
## CLEANING AND THINNING
## TIME CURVE

121 PLOTS FROM 6 PROJECTS - ALL DIAMETERS

1934



| | | | |
|---|---|---|---|
| Net Allotment ..... | | | $220,713.40 |

Allotments

| | | | |
|---|---|---|---|
| Experiment Station .....$ | 4,600.00 | | |
| Stanislaus ..... | 29,483.60 | | |
| Plumas ..... | 53,593.60 | | |
| Lassen ..... | 19,933.60 | | |
| Eldorado ..... | 15,106.40 | | |
| Shasta ..... | 30,000.00 | | |
| Sierra ..... | 39,682.85 | | |
| Modoc ..... | 10,000.00 | $202,400.05 | |
| Net Allotment to Forests ..... | | | 202,400.05 |

Less accounts not in itemized tables

| | | | |
|---|---|---|---|
| Experiment Station Allotment..... | 4,600.00 | | |
| Eldorado..... | 15,106.40 | | |
| Lasco 1933 Expenditures. | 1,559.89 | | |
| Miners Ditch " . | 2,294.51 | | |
| Roush Mill Co., 1934.... | 1,742.17 | | |
| Sub-Total..... | | 25,302.97 | 177,097.08 |
| Less itemized account..... | 162,119.35 | | |
| Less purchase of major equipmt. | 14,977.73 | | |
| Total..... | | 177,097.08 | 202,400.05 |

Forest Management

| | | | |
|---|---|---|---|
| Salaries..... | 384.75 | | |
| Travel ..... | 700.00 | | |
| Office Sup. & Misc. .... | 15.00 | | |
| Binoculars ..... | 273.15 | 1,372.90 | |
| Total Expenditures, Stand Improvement..... | | | 203,772.95 |
| Balance, as of January 5, 1935 ..... | | | 16,940.45 |

## VIII. RECOMMENDATIONS

1. Area selection. Remove the restrictions confining stand improvement work to cut-over lands. This will open up several possibilities.

(a) Prospective Christmas tree areas. Improvement cutting in this type is probably inadvisable until the first crop trees have been removed, but allowances should be made for minor road construction on these areas, as most of them are of low fire hazard rating, and the building of standard roads is not contemplated in the immediate future. Not much expenditure need be made on the proposed roads as they would only be used for very short periods.

(b) Marginal areas between the woodland and the ponderosa pine types, where pine reproduction has come in under oak.

(c) Areas on which the mature timber will be sold within a few years. Money spent on sanitation tree and snag disposal should be returned by timber sale appraisal allowance adjustments. The present practice is to allow approximately ten cents per M ft. B.M. on the estimated cut for snag disposal. The average cost of snag disposal on stand improvement work during the past season was 78 cents per tree. Timber survey estimates 1.5 to 2 snags per acre on virgin stands. Figuring 2 snags, the per acre cost would be $1.56 or the allowance made on a cut of 15,600 ft. B.M. per acre. The cut on most timber sale areas exceeds this footage.

2. Stand selection. A thinning and pruning operation in one of the larger pole stands for experimental purposes would be interesting.

3. Liberation cutting of oak. Reduce limbing to a minimum. Most of the bigger oak have such wide crowns that some limbing is necessary, or mechanical interference would remain for several years.

4. Slash disposal. Continue the current practice of lopping and scattering and fire-proofing roadsides and other areas of high risk. Carry out experiments on several types of area as to the speed with which fire line can be constructed through treated and untreated stands of similar characteristics. There has been some criticism from lumber operators regarding the amount of slash resulting from cutting operations and the apparently increased fire hazard. Data should be collected if possible on rate of spread of fires, originating on, or spreading to, treated areas.

Camp Organization. Increase the size of the camps to forty effective men to reduce overhead costs. Employ a man for timekeeping and other routine clerical work to relieve the technical staff of as much detail as possible. Relieve technical

assistants from crew-leader responsibilities. It is a good idea to train them in leadership, but due to the scarcity of men with technical training their full time should be spent on the necessary field work. They will have sufficient contact with cutting crews in answering questions and settling arguments to bring out any such qualifications. They should of course spend a week or so on actual cutting to become acquainted with the practical as well as the theoretical aspects of the work.

The charge per meal should be more in line with actual costs. The losses during the past season varied from ten cents to fifty-five cents a day per man, with the result that his daily wage was increased by that amount.

S
Stand Improvement

TABLE I
TIMBER STAND IMPROVEMENT - R 5
CHANGE IN COMPOSITION OF STAND
12 PROJECTS
1934
For Acre Figures

2-4-35

| Project | | Sugar Pine | | | Increase | Ponderosa Pine | | | Increase | Incense Cedar | | | Increase | Douglas Fir | | | Increase | White Fir | | | Increase | Totals | | | Increase | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Orig. | Cut | Leave | % | Orig. | Cut | Leave | % | Orig. | Cut | Leave | % | Orig. | Cut | Leave | % | Orig. | Cut | Leave | % | Orig. | Cut | Leave | % | No. of Plots |
| Burnam | No. | - | - | - | - | 510 | 187 | 323 | - | 472 | 253 | 219 | - | - | - | - | - | - | - | - | - | 982 | 440 | 542 | - | Sample plots |
| | % | - | - | - | - | 51.93 | 42.50 | 59.59 | +7.66 | 48.07 | 57.50 | 40.41 | -7.66 | - | - | - | - | - | - | - | - | 100.00 | 100.00 | 100.00 | 0.00 | |
| Ellis Meadows | No. | 55 | 2 | 53 | - | 9 | 1 | 8 | - | 59 | 4 | 55 | - | - | - | - | - | 167 | 18 | 149 | - | 290 | 25 | 265 | - | 2 plots - total 60 acres |
| (Brown) | % | 18.97 | 8.00 | 20.00 | +1.03 | 3.10 | 4.00 | 3.02 | -.08 | 20.34 | 16.00 | 20.75 | + .41 | - | - | - | - | 57.59 | 72.00 | 56.23 | -1.36 | 100.00 | 100.00 | 100.00 | 0.00 | |
| French Creek | No. | 446 | 232 | 214 | | 668 | 386 | 282 | | 240 | 146 | 94 | - | 235 | 207 | 28 | - | 303 | 286 | 17 | - | 1892 | 1257 | 635 | | 16 plots - 1/10 A. each |
| | % | 23.57 | 18.46 | 33.70 | +10.13 | 35.31 | 30.71 | 44.41 | +9.10 | 12.68 | 11.61 | 14.80 | +2.12 | 12.42 | 16.47 | 4.41 | -8.01 | 16.02 | 22.75 | 2.68 | -13.34 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Lasco | No. | 7xx | 7 | - | - | 442 | 103 | 339 | - | - | - | - | - | - | - | - | - | 5 | 4 | 1 | - | 454 | 114 | 340 | - | 225 plots - 1/10 A. |
| | % | 1.54 | 6.14 | - | -1.54 | 97.36 | 90.35 | 99.71 | +2.35 | - | - | - | - | - | - | - | - | 1.10 | 3.51 | .29 | -.81 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Logan Mt. | No. | 24 | 8 | 16 | | 1133 | 539 | 594 | - | 3 | 3 | - | - | - | - | - | - | 452 | 432 | 20 | - | 1612 | 982 | 630 | - | 37 plots - 1/10 A. |
| | % | 1.49 | .81 | 2.54 | +1.05 | 70.28 | 54.89 | 94.29 | +24.01 | .19 | .31 | - | -.19 | - | - | - | - | 28.04 | 43.99 | 3.17 | -24.87 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Manuel Est. | No. | 1 | - | 1 | - | 1134 | 602 | 532 | - | 594 | 251 | 343 | - | - | - | - | - | - | - | - | - | 1729 | 853 | 876 | - | 16 plots - 1/10 A. |
| | % | .06 | - | .11 | +.05 | 65.59 | 70.57 | 60.73 | -4.86 | 34.35 | 29.43 | 39.16 | +4.81 | - | - | - | - | - | - | - | - | 100.00 | 100.00 | 100.00 | 0.00 | |
| Massack | No. | 78 | 14 | 64 | - | 733 | 335 | 398 | - | 673 | 456 | 217 | - | 248 | 185 | 63 | - | 65 | 49 | 16 | - | 1797 | 1039 | 758 | - | Sample plots |
| | % | 4.34 | 1.35 | 8.44 | +4.10 | 40.79 | 32.24 | 52.51 | +11.72 | 37.45 | 43.89 | 28.63 | -8.82 | 13.80 | 17.80 | 8.31 | -5.49 | 3.62 | 4.72 | 2.11 | -1.51 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Meadow Valley | No. | 49 | 3 | 46 | - | 210 | 60 | 150 | - | 275 | 111 | 164 | - | 131 | 70 | 61 | - | 215 | 130 | 85 | - | 880 | 374 | 506 | - | 21 plots - 1/10 A. |
| | % | 5.57 | .80 | 9.09 | +3.52 | 23.86 | 16.04 | 29.64 | +5.78 | 31.25 | 29.68 | 32.41 | +1.16 | 14.89 | 18.72 | 12.06 | -2.83 | 24.43 | 34.76 | 16.80 | -7.63 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Miners D. | No. | 105 | 20 | 85 | - | 286 | 73 | 213 | - | 565 | 318 | 247 | - | - | - | - | - | 254xxx | 164 | 90 | - | 1210 | 575 | 635 | - | 103 plots - 1/10 A. |
| | % | 8.68 | 3.48 | 13.39 | +4.71 | 23.64 | 12.70 | 33.54 | +9.90 | 46.69 | 55.30 | 38.90 | -7.79 | - | - | - | - | 20.99 | 28.52 | 14.17 | -6.82 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Peach & Fig | No. | 212 | 184 | 28 | - | 2286 | 1497 | 789 | - | 1493 | 1362 | 131 | - | - | - | - | - | 140 | 126 | 14 | - | 4131 | 3169 | 962 | - | 30 plots - 1/10 A. |
| Growers | % | 5.13 | 5.81 | 2.91 | -2.22 | 55.34 | 47.24 | 82.02 | +26.68 | 36.14 | 42.98 | 13.62 | -22.52 | - | - | - | - | 3.39 | 3.97 | 1.45 | -1.94 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Taylor Creek | No. | 98 | 35 | 63 | - | 1763 | 1126 | 637 | - | 815 | 668 | 147 | - | 215 | 204 | 11 | - | 26 | 25 | 1 | - | 2917 | 2058 | 859 | - | 21 plots - 1/10 A. |
| | % | 3.36 | 1.70 | 7.33 | +3.97 | 60.44 | 54.71 | 74.16 | +13.72 | 27.94 | 32.46 | 17.11 | -10.83 | 7.37 | 9.91 | 1.28 | -6.09 | .89 | 1.22 | .12 | -.77 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Shasta | No. | 117 | 31 | 86 | - | 765 | 438 | 327 | - | 956 | 684 | 272 | - | 55 | 24 | 31 | - | 567 | 480 | 87 | - | 2460 | 1657 | 803 | - | 23 plots - 1/10 A. |
| (P20) | % | 4.76 | 1.87 | 10.71 | +5.95 | 31.10 | 26.43 | 40.72 | +9.62 | 38.86 | 41.28 | 33.87 | -4.99 | 2.23 | 1.45 | 3.86 | +1.63 | 23.05 | 28.97 | 10.84 | -12.21 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Shasta | No. | 101 | 39 | 62 | - | 691 | 378 | 313 | - | 194 | 131 | 63 | - | 48 | 29 | 19 | - | 506 | 407 | 99 | - | 1540 | 984 | 556 | - | 19 plots - Avg..282 A. |
| (P40) | % | 6.56 | 3.96 | 11.15 | +4.59 | 44.87 | 38.42 | 56.29 | +11.42 | 12.60 | 13.31 | 11.33 | -1.27 | 3.11 | 2.95 | 3.42 | +.31 | 32.86 | 41.36 | 17.81 | -15.05 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Totals) | | 1231 | 566 | 665 | - | 10,621 | 5724 | 4897 | - | 6280 | 4383 | 1897 | - | 932 | 719 | 213 | - | 2533 | 2103 | 430 | - | 21,604 | 13,502 | 8102 | - | |
| Averages | No. | 102 | 47 | 55 | - | 885 | 477 | 408 | - | 523 | 365 | 158 | - | 78 | 60 | 18 | - | 211 | 175 | 36 | - | 1800 | 1125 | 675 | - | |
| | % | 5.70 | 4.19 | 8.21 | +2.51 | 49.16 | 42.39 | 60.44 | +11.28 | 29.07 | 32.46 | 23.41 | -5.66 | 4.31 | 5.33 | 2.63 | -1.68 | 11.73 | 15.58 | 5.31 | -6.42 | 100.00 | 100.00 | 100.00 | 0.00 | |
| Totals## | | 7 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Averages | No. | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | % | .03 | .03 | - | -0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

) Average - Cut : Leave = 1.7:1

x Percents of total original stand, total trees cut, and total stand left.

xx Lodge pole pine.

xxx Species of fir not given, probably white fir.

) Ellis Meadow excluded because of light stand.

S
Stand Improvement

TABLE A

2/4/35.

SUMMARY OF COSTS PER GROSS ACRE

| | CAMP PROJECTS (10) Based on 28,216 Gross Acres | | | | NON-CAMP PROJECTS (6) Based on 6,099 Gross Acres | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Costs | Percent of Subtotal | Cost per Gross Acre | Percentage of Cost Per Gross Acre | Total Costs | Percent of Subtotal | Cost per Gross Acre | Percentage of Cost Per Gross Acre |
| DIRECT CHARGES | | | | | | | | |
| Cleaning | 30689.68 | 38.62 | 1.087 | 25.57 | 14558.64 | 43.16 | 2.387 | 34.56 |
| Thinning | 7866.32 | 9.90 | .279 | 6.56 | 2774.80 | 8.22 | .455 | 6.59 |
| Sanitation | 10673.04 | 13.43 | .378 | 8.89 | 3374.51 | 10.00 | .553 | 8.00 |
| Liberation | 2009.26 | 2.53 | .071 | 1.67 | 2190.15 | 6.49 | .359 | 5.19 |
| Snags | 24591.63 | 30.95 | .872 | 20.51 | 8210.30 | 24.34 | 1.346 | 19.49 |
| Slash Disposal | 3632.51 | 4.57 | .129 | 3.04 | 2624.87 | 7.78 | .431 | 6.24 |
| Sub-Total Direct Charges | 79462.44 | 100.00 | 2.816 | 66.23 | 33733.27 | 100.00 | 5.531 | 80.07 |
| PRORATED CHARGES | | | | | | | | |
| Supervision | | | | | | | | |
| Area Selection | | 6.95 | .026 | .61 | | 3.08 | .031 | .30 |
| Mapping | | 26.36 | .101 | 2.38 | | 7.30 | .050 | .72 |
| Project Plan | | 1.53 | .006 | .14 | | | | |
| Boundary Running | | 4.46 | .017 | .40 | | 6.46 | .044 | .64 |
| Time studies | | 8.33 | .032 | .75 | | 17.19 | .117 | 1.69 |
| Maint. of Records | | 39.77 | .152 | 3.57 | | 14.77 | .100 | 1.45 |
| Project Reports | | 2.63 | .010 | .24 | | 2.16 | .015 | .22 |
| General Supervision | | 9.97 | .038 | .89 | | 49.04 | .334 | 4.84 |
| Subtotal Supervision | 10770.93 | 100.00 | .382 | 8.99 | 4153.86 | 100.00 | .681 | 9.86 |
| CAMP HOUSING | | | | | | | | |
| Construction | | 82.38 | .324 | 7.62 | | | | |
| Maintenance | | 17.62 | .069 | 1.62 | | | | |
| Sub-Total Camp Housing | 11086.52 | 100.00 | .393 | 9.24 | | | | |
| SUBSISTENCE | | | | | | | | |
| Net Loss, Cook House | 8047.47 | 100.00 | .285 | 6.70 | | | | |
| MISCELLANEOUS | | | | | | | | |
| Small Tools | | 25.92 | .097 | 2.28 | | 39.27 | .273 | 3.95 |
| Transportation | | 26.19 | .099 | 2.33 | | 23.00 | .160 | 2.31 |
| Miscellaneous | | 47.89 | .180 | 4.23 | | 37.73 | .263 | 3.81 |
| Sub-Total Miscellaneous | 10618.01 | 100.00 | .376 | 8.84 | 4248.13 | 100.00 | .696 | 10.07 |
| Sub-Total Prorated Charges | 40522.93 | | 1.436 | 33.77 | 8400.99 | | 1.377 | 19.93 |
| GRAND TOTAL | 119,985.37 | | 4.252 | 100.00 | 42134.26 | | 6.908 | 100.00 |

S
Stand Improvement

Table B

2-4-35

SUMMARY OF FINAL COSTS BY ACTIVITIES

| Camp Projects | Gross Acres | CLEANING acres | Total Cost | Cost Net A. | THINNING Acres | Total Cost | Cost Net A. | SANITATION No. Trees | Total Cost | Cost Per Tree | LIBERATION No. Trees | Total Cost | Cost Per Tree | SNAG DISPOSAL No. Trees | Total Cost | Cost Per Tree | SLASH DISPOSAL M.H. | Total Cost | Cost Net A. | Cost Gross A. | GRAND TOTAL Total Cost | Cost Per A. | Percent of Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Soquel | 7880 | 40 | 702.69 | 17.567 | - | | - | 4865 | 10,956.82 | 2.25 | 4 | 12.40 | 3.10 | 14392 | 15,353.93 | 1.07 | 16 | 12.40 | .310 | .002 | 27,033.24 | 3.431 | 16.68 |
| 2-Pilgrim Creek | 4800 | 425 | 5318.52 | 12.514 | 133 | 3085.44 | 23.20 | 1004 | 1,567.43 | 1.56 | 103 | 239.41 | 2.22 | 6260 | 6,056.26 | .97 | 1787 | 1211.67 | 2.171 | .252 | 17,478.70 | 3.641 | 10.78 |
| 3-French Creek | 330 | 181 | 7012.72 | 38.744 | 106 | 3496.62 | 32.98 | 85 | 270.59 | 3.18 | 1374 | 2342.10 | 1.70 | 1303 | 1,495.98 | 1.15 | 3482 | 3299.23 | 11.496 | 9.998 | 17,917.24 | 54.255 | 11.05 |
| 4-Logan Mt. | 1296 | 1290 | 10,233.10 | 7.933 | 6 | 86.45 | 14.41 | - | - | - | - | - | - | 2186 | 1,015.38 | .79 | 1431 | 1291.86 | .997 | .997 | 12,626.79 | 9.743 | 7.79 |
| 5-Miners Ditch | 1983 | 1972 | 8474.86 | 4.298 | 11 | 220.41 | 20.04 | 13 | 18.06 | 1.39 | 189 | 99.77 | .53 | 4944 | 2,129.46 | .43 | - | - | - | - | 10,942.56 | 5.549 | 6.75 |
| 6-Browns Sierra | 4690 | 2150 | 1997.63 | .929 | 123 | 1638.59 | 13.73 | 514 | 685.45 | 1.32 | 537 | 473.05 | .88 | 6275 | 5,108.25 | .81 | 22 | 21.68 | .009 | .005 | 9,974.09 | 2.127 | 6.15 |
| 7-Meadow Valley | 1010 | 304 | 4509.95 | 14.835 | 113 | 1631.67 | 14.44 | 193 | 102.33 | .53 | 576 | 307.44 | .53 | 1356 | 684.08 | .50 | - | - | - | - | 7,235.47 | 7.164 | 4.46 |
| 8-Peach Growers | 1317 | 520 | 3861.38 | 7.426 | 71 | 1366.34 | 19.24 | 85 | 64.12 | .75 | 64 | 55.08 | .86 | 793 | 569.38 | .72 | - | - | - | - | 5,916.30 | 4.492 | 3.65 |
| 9-Lasco | 2230 | 2230 | 4978.24 | 2.232 | - | - | - | 12 | 2.78 | .23 | 72 | 12.70 | .18 | 109 | 112.11 | 1.03 | 520 | 404.90 | .182 | .182 | 5,510.73 | 2.471 | 3.40 |
| 10-Slagger | 2680 | 23 | 480.45 | 20.889 | 22 | 593.83 | 26.99 | 1261 | 1,176.24 | .93 | - | - | - | 4046 | 3894.37 | .77 | - | - | - | - | 5,364.86 | 1.994 | 3.30 |
| Sub-total | 28,216 | 9,135 | 47,569.54 | 5.207 | 585 | 12,169.35 | 20.802 | 8,037 | 14,843.91 | 1.847 | 2,924 | 3,541.95 | 1.211 | 41,658 | 35,619.20 | .855 | 7,258 | 6,241.14 | .642 | .221 | 119,985.09 | 4.252 | 74.01 |
| Percentage Acres | 100.00 | 32.4 | | | 2.1 | | | 100.00 | | | 100.00 | | | 100.00 | | | | | | | | | |
| Percentage Costs | | | 39.66 | | | 10.14 | | | 12.37 | | | 2.95 | | | 29.68 | | | 5.20 | | | 100.00 | | |
| Non Camp Projects | | | | | | | | | | | | | | | | | | | | | | | |
| 11-Wessack | 600 | 510 | 5327.77 | 10.447 | - | - | - | 539 | 334.97 | .62 | - | - | - | 2020 | 1387.19 | .69 | 4145 | 2697.91 | 5.682 | 4.830 | 9947.84 | 16.580 | 6.14 |
| 12-Manuel | 1240 | 175 | 2032.92 | 11.617 | - | - | - | 238 | 204.07 | .86 | 4262 | 3646.68 | .86 | 3430 | 2516.21 | .73 | - | - | - | - | 8399.88 | 6.774 | 5.18 |
| 13-N. Warners | 1135 | 205 | 3447.12 | 16.815 | 1½ | 25.20 | 16.800 | 912 | 485.41 | .53 | 31 | 16.04 | .52 | 3203 | 1434.89 | .45 | - | - | - | - | 5408.66 | 4.765 | 3.34 |
| 14-Taylor Creek | 850 | 262 | 4154.49 | 15.856 | - | - | - | 176 | 274.96 | 1.56 | - | - | - | 936 | 517.35 | .55 | 144 | 94.50 | .361 | .111 | 5041.10 | 5.931 | 3.11 |
| 15-S. Warners | 800 | - | - | - | 280 | 3484.60 | 12.445 | 501 | 520.20 | 1.04 | - | - | - | 432 | 471.25 | 1.09 | 150 | 115.30 | .412 | .144 | 4591.35 | 5.729 | 2.83 |
| 16-Mohawk | 880 | - | - | - | - | - | - | 1545 | 909.92 | .59 | - | - | - | 6517 | 3292.94 | .51 | - | - | - | - | 4202.86 | 4.776 | 2.59 |
| 17-Mabie | 394 | 394 | 2217.89 | 5.629 | - | - | - | - | - | - | - | - | - | - | - | - | 996 | 452.98 | 1.150 | 1.150 | 2670.87 | 6.779 | 1.65 |
| 18-Burnam | 200 | 140 | 1394.82 | 9.963 | - | - | - | - | - | - | - | - | - | 421 | 378.28 | .90 | 153 | 98.60 | .704 | .493 | 1871.70 | 9.358 | 1.15 |
| Sub-total | 6,099 | 1,686 | 18,575.01 | 11.017 | 281 | 3,509.80 | 12.490 | 3,911 | 2,729.53 | .698 | 4,293 | 3,662.72 | .853 | 16,959 | 9,997.91 | .590 | 5,588 | 3,659.29 | 1.860 | .600 | 42,134.26 | 6.908 | 25.99 |
| Percentage Acres | | 27.64 | | | 4.61 | | | 100.00 | | | 100.00 | | | 100.00 | | | | | | | | | |
| Percentage Costs | | | 44.09 | | | 8.33 | | | 6.48 | | | 8.69 | | | 23.73 | | | 8.68 | | | 100.00 | | |
| Total All Projects | 34,315 | 10,821 | 66,144.55 | 6.113 | 866 | 15,679.15 | 18.105 | 11,948 | 17,573.44 | 1.471 | 7,217 | 7204.67 | .998 | 58,617 | 45,617.11 | .778 | 12,846 | 9,900.43 | .847 | .289 | 162,119.35 | 4.724 | |
| Percentage Acres | 100.00 | 31.53 | | | 2.52 | | | 100.00 | | | 100.00 | | | 100.00 | | | | | | | | | |
| Percentage Costs | | | 40.80 | | | 9.67 | | | 10.84 | | | 4.44 | | | 28.14 | | | 6.11 | | | 100.00 | | |

| | | | |
|---|---|---|---|
| Cleaning | 10,821 | 66,144.55 | 6.113 |
| Thinning | 866 | 15,679.15 | 18.105 |
| Total | 11,687 | 81,823.70 | 7.001 |
| Percentage Acres | 34.06 | | |
| Percentage Costs | | 50.47 | |

| | | |
|---|---|---|
| Sanitation | 11,948 | 17,573.44 | 1.471 |
| Liberation | 7,217 | 7,024.67 | .998 |
| Snags | 58,617 | 45,617.11 | .778 |
| Total | 77,782 | 70,215.22 | .903 |
| Percentage Costs | | 43.31 | |

$
Stand Improvement

(ICE-11)

TABLE C

2-4-35.

Summary Of Direct Labor Charges for all Activities

| Project | LABOR Gross Acres | Total Man Hours | Man Hours: Per A. | Total Cost | Av.Wage: Per Man Hour | Cost Per Acre | DIRECT SUPERVISION Total: Man Hours: | Per A. | Total Cost | Av.Wage: Per Man Hour | Cost: Per Acre | MARKING Total: Man Hours: | Per A. | Total Cost | Av.Wage: Per Man Hour | Cost: Per Acre | CHECKING Total: Man Hours: | Per A. | Total Cost | Av.Wage: Per Man Hour | Cost: Per Acre | PRORATED COSTS Total Costs | Costs Per: Effective: Man Hour | Cost Per Acre | % of Prorated: Costs In: Total | TOTAL COSTS Total Costs | Costs Per: Ef.Mn.Hr. | Cost Per A. | Total Man Hours | Man Hrs.: Per Acre | Direct Costs | Per Labor: Ef.Mn.Hr. | Per Acre | Percent Based on Man Hours: Labor | Super-vision | Mark-ing | Check-ing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Soquel | 7880 | 30,357 | 3.85 | 16,700.75 | .550 | 2.119 | 2368 | .301 | 1,778.00 | .751 | .226 | 2012 | .255 | 1367.75 | .680 | .174 | | | | | | 7,191.74 | .237 | .913 | 26.60 | 27,033.24 | .891 | 3.431 | 34,737 | 4.408 | 19,846.50 | .654 | 2.519 | 87.39 | 6.83 | 5.79 | |
| 2. Pilgrim Creek | 4800 | 17,358 | 3.62 | 8,807.15 | .507 | 1.835 | 2511 | .523 | 1,932.00 | .769 | .403 | 1615 | .336 | 1009.96 | .625 | .210 | 305 | .064 | 251.11 | .823 | .052 | 5,501.07 | .317 | 1.146 | 31.47 | 17,478.78 | 1.007 | 3.641 | 21,789 | 4.539 | 11,977.71 | .690 | 2.495 | 79.66 | 11.52 | 7.41 | 1.40 |
| 3. French Creek | 330 | 15,192 | 46.04 | 7,038.75 | .463 | 21.330 | 2481 | 7.518 | 2,006.17 | .809 | 6.079 | 2046 | 6.200 | 1045.50 | .511 | 3.168 | | | | | | 7,826.82 | .515 | 23.718 | 43.68 | 17,917.24 | 1.179 | 54.295 | 19,719 | 59.755 | 10,090.42 | .664 | 30.577 | 77.04 | 12.58 | 10.38 | |
| 4. Logan Mt. | 1296 | 11,838 | 9.13 | 5,482.33 | .463 | 4.230 | 1485 | 1.146 | 1,239.50 | .835 | .956 | 115 | .089 | 52.39 | .456 | .040 | 220 | .170 | 103.11 | .468 | .080 | 5,749.56 | .486 | 4.436 | 45.53 | 12,626.79 | 1.067 | 9.743 | 13,658 | 10.539 | 6,877.23 | .581 | 5.307 | 86.67 | 10.87 | 0.84 | 1.61 |
| 5. Miners Ditch | 1983 | 11,156 | 5.63 | 6,211.36 | .557 | 3,132 | 2113 | 1.065 | 1,641.77 | .777 | .828 | 21 | .010 | 12.00 | .571 | .006 | 470 | .236 | 327.43 | .697 | .165 | 2,750.01 | .247 | 1.387 | 25.13 | 10,942.56 | .981 | 5.549 | 13,760 | 6.939 | 8,192.55 | .734 | 4.131 | 81.08 | 15.36 | 0.15 | 3.42 |
| 6. Brown's Sierra | 4690 | 9,159 | 1.95 | 5,060.76 | .553 | 1.079 | 1015 | .216 | 716.00 | .705 | .153 | 474 | .101 | 319.94 | .675 | .068 | 29 | .006 | 18.44 | .636 | .004 | 3,858.95 | .421 | .823 | 38.69 | 9,974.09 | 1.089 | 2.127 | 10,677 | 2.277 | 6,115.14 | .668 | 1.304 | 85.78 | 9.51 | 4.44 | 0.27 |
| 7. Meadow Valley | 1010 | 7,402 | 7.33 | 3,882.90 | .525 | 3,844 | 545 | .540 | 394.60 | .724 | .391 | 880 | .871 | 457.60 | .520 | .453 | | | | | | 2,500.47 | .338 | 2.476 | 34.56 | 7,235.77 | .976 | 7,164 | 8,827 | 8.740 | 4,735.30 | .640 | 4.688 | 83.86 | 6.17 | 9.97 | |
| 8. Peach Growers | 1317 | 5,802 | 4.41 | 3,191.24 | .550 | 2,423 | 831 | .479 | 481.67 | .763 | .366 | 95 | .072 | 75.00 | .789 | .057 | 167 | .127 | 128.38 | .769 | .097 | 2,040.01 | .358 | 1.549 | 34.48 | 5,916.30 | 1.020 | 4.492 | 6,596 | 5.084 | 3,876.29 | .668 | 2.943 | 86.66 | 9.42 | 1.42 | 2.50 |
| 9. Lasco | 2230 | 5,636 | 2.53 | 2,711.05 | .481 | 1.216 | 647 | .290 | 522.80 | .808 | .234 | 556 | .249 | 359.49 | .548 | .161 | 224 | .100 | 152.87 | .682 | .069 | 1,764.54 | .313 | .791 | 32.02 | 5,510.73 | .978 | 2.471 | 7,163 | 3.213 | 3,746.19 | .665 | 1,680 | 78.68 | 9.03 | 9.16 | 3.13 |
| 10.Slagger | 2680 | 6,136 | 2.29 | 3,254.32 | .530 | 1.214 | 630 | .231 | 484.92 | .782 | .181 | 512 | .191 | 348.89 | .486 | .093 | 19 | .007 | 17.00 | .995 | .006 | 1,339.78 | .218 | .500 | 25.07 | 5,344.89 | .871 | 1.994 | 7,287 | 2.719 | 4,005.11 | .653 | 1,494 | 84.20 | 8.51 | 7.08 | 0.26 |
| Total | 28,216 | 130,036 | 4.25 | 62,340.50 | .519 | 2.209 | 14,416 | .469 | 11,197.43 | .777 | .397 | 8426 | .320 | 4948.52 | .587 | .175 | 1434 | .051 | 998.34 | .696 | .035 | 40,522.95 | .338 | 1.436 | 33.77 | 119,985.09 | 1.000 | 4.251 | 144,312 | 5.115 | 79,462.14 | .652 | 2.816 | 83.18 | 9.99 | 5.84 | 0.99 |
| 11.Wessack | 600 | 12,916 | 21.53 | 6,219.66 | .482 | 10.366 | 733 | 1.222 | 566.71 | .773 | .945 | 98 | .163 | 85.96 | .877 | .143 | | | | | | 3,075.51 | .238 | 5.126 | 30.92 | 9,547.84 | .770 | 16.580 | 13,747 | 22.912 | 6,872.33 | .538 | 11.454 | 93.96 | 5.33 | 0.71 | |
| 12.Manuel | 1240 | 12,719 | 10.26 | 7,401.38 | .582 | 5.969 | 406 | .327 | 323.71 | .797 | .261 | | | | | | | | | | | 674.79 | .053 | .544 | 8.30 | 8,399.88 | .660 | 6.774 | 13,125 | 10,585 | 7,725.09 | .607 | 6,230 | 96.91 | 3.09 | | |
| 13.N. Warners | 1135 | 6,702 | 5.90 | 3,845.52 | .573 | 3.388 | 234 | .206 | 213.20 | .911 | .188 | 106 | .093 | 88.51 | .835 | .078 | 13 | .011 | 11.70 | .900 | .010 | 1,249.73 | .186 | 1.101 | 23.11 | 5,408.65 | .807 | 4.765 | 7,055 | 6,216 | 4,158.93 | .621 | 3.664 | 95.00 | 3.32 | 1.50 | 0.18 |
| 14.Taylor Creek | 850 | 6,451 | 7.59 | 3,134.00 | .486 | 3.687 | 706 | .831 | 652.28 | .924 | .767 | 80 | .094 | 89.75 | 1.122 | .106 | | | | | | 1,165.07 | .181 | 1.371 | 23.11 | 5,041.10 | .781 | 5.931 | 7,837 | 8.514 | 3,876.03 | .601 | 4.560 | 89.14 | 9.76 | 1.10 | |
| 15.S. Warners | 800 | 5,330 | 6.66 | 2,988.70 | .561 | 3.736 | 408 | .510 | 330.15 | .809 | .413 | 330 | .413 | 247.50 | .750 | .309 | 50 | .063 | 48.00 | .960 | .060 | 977.00 | .183 | 1.221 | 21.28 | 4,591.35 | .861 | 5.739 | 6,118 | 7.648 | 3,614.35 | .678 | 4.518 | 87.13 | 6.67 | 5.39 | 0.82 |
| 16.Mohawk | 880 | 6,642 | 7.55 | 3,493.55 | .526 | 3.970 | | | | | | | | | | | | | | | | 709.31 | .107 | .806 | 16.88 | 4,202.86 | .633 | 4.776 | 6,642 | 7.548 | 3,493.55 | .526 | 3.970 | 100.00 | | | |
| 17.Mabie | 394 | 4,000 | 10.15 | 1,873.41 | .468 | 4.755 | 427 | 1.084 | 891.01 | .682 | .739 | 535 | 1.358 | 274.53 | .513 | .697 | 143 | .363 | 100.07 | .700 | .254 | 132.85 | .033 | .337 | 4.97 | 2,670.87 | .668 | 6.779 | 5,105 | 12.957 | 2,538.02 | .635 | 6.444 | 78.35 | 8.36 | 10.48 | 2.81 |
| 18.Burnam | 200 | 2,127 | 10.63 | 1,092.63 | .514 | 5.463 | 316 | 1.580 | 196.19 | .621 | .981 | 333 | 1.665 | 166.26 | .499 | .831 | | | | | | 416.73 | .196 | 2.084 | 22.26 | 1,871.70 | .880 | 9.359 | 2,776 | 13.880 | 1,454.97 | .684 | 7.275 | 78.62 | 11.38 | 12.00 | |
| Total | 6,099 | 56,887 | 9.33 | 30,048.74 | .528 | 4.927 | 3,230 | .710 | 2,573.25 | .797 | .422 | 1482 | .372 | 952.51 | .643 | | 206 | .034 | 159.77 | .776 | .026 | 8,400.99 | .148 | 1,377 | 19.94 | 42,134.26 | .741 | 6.914 | 61,805 | 10.134 | 33,733.27 | .593 | 5.531 | 92.04 | 5.23 | 2.40 | 0.33 |
| Grand Total | 34,315 | 176,923 | 5.156 | 92,389.24 | .522 | 2.693 | 17,646 | .514 | 13,770.68 | .780 | .401 | 9908 | .289 | 5901.03 | .596 | .172 | 1640 | .048 | 1158.11 | .706 | .034 | 48,923.94 | .277 | 1.436 | 30.16 | 162,119.35 | .916 | 4.724 | 206,117 | 6.007 | 113,195.41 | .640 | 3.299 | 85.84 | 8.56 | 4.81 | 0.79 |

S

Stand Improvement

TABLE C-1

C L E A N I N G

2/4/35

| Camp Projects | Gross Acres | Net Acres | LABOR: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Rate Per M.H. | DIRECT SUPERVISION: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Rate Per M.H. | MARKING: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Rate Per M.H. | CHECKING: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Rate Per M.H. | TOTAL DIRECT CHARGES: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Per EMH Labor | PRORATED COSTS: Total | Per A. | Per EMH Labor | GRAND TOTAL COSTS: Total | Per A. | Per EMH Labor | Percentage of Total Costs Direct | Percentage of Total Costs Prorated | Percent of Total Costs by Projects |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Soquel | 7880 | 40 | 584 | 14.600 | 325.60 | 8.140 | .558 | 126 | 3.150 | 98.30 | 2.458 | .780 | 136 | 3.400 | 91.30 | 2.295 | .675 | - | - | - | - | - | 846 | 21.150 | 515.70 | 12.893 | .883 | 186.99 | 4.675 | .320 | 702.69 | 17.567 | 1.203 | 73.39 | 26.61 | 1.06 |
| 2-Pilgrim Creek | 4800 | 425 | 5251 | 12.355 | 2493.40 | 5.867 | .475 | 1245 | 2.929 | 941.86 | 2.216 | .757 | 93 | .219 | 64.29 | .151 | .691 | 156 | .367 | 127.14 | .299 | .815 | 6745 | 15.871 | 3626.69 | 8.533 | .691 | 1691.33 | 3.981 | .322 | 5318.52 | 12.514 | 1.013 | 68.19 | 31.81 | 8.04 |
| 3-French Creek | 330 | 181 | 5700 | 31.492 | 2612.30 | 14.433 | .458 | 957 | 5.287 | 763.62 | 4.219 | .798 | 1405 | 7.762 | 700.17 | 3.868 | .498 | - | - | - | - | - | 8062 | 44.541 | 4076.09 | 22.520 | .715 | 2936.63 | 16.224 | .515 | 7012.72 | 38.744 | 1.230 | 58.12 | 41.88 | 10.60 |
| 4-Logan Mt. | 1296 | 1290 | 9412 | 7.296 | 4371.81 | 3.389 | .464 | 1345 | 1.043 | 1132.51 | .878 | .842 | - | - | - | - | - | 220 | .171 | 103.11 | .080 | .469 | 10977 | 8.509 | 5607.43 | 4.347 | .596 | 4625.67 | 3.586 | .491 | 10233.10 | 7.933 | 1.087 | 54.80 | 45.20 | 15.47 |
| 5-Miners Ditch | 1983 | 1972 | 8465 | 4.293 | 4734.00 | 2.401 | .559 | 1690 | .857 | 1333.42 | .676 | .788 | - | - | - | - | - | 488 | .247 | 326.68 | .166 | .669 | 10643 | 5.397 | 6394.10 | 3.242 | .755 | 2080.76 | 1.055 | .246 | 8474.86 | 4.298 | 1.001 | 75.45 | 24.55 | 12.81 |
| 6-Browns Sierra | 4690 | 2150 | 1759 | .818 | 967.45 | .450 | .550 | 253 | .118 | 186.94 | .087 | .739 | 108 | .050 | 73.85 | .034 | .684 | 3 | .001 | 1.88 | .001 | .627 | 2123 | .987 | 1230.12 | .572 | .699 | 767.51 | .357 | .436 | 1997.63 | .920 | 1.124 | 61.58 | 38.42 | 3.02 |
| 7-Meadow Valley | 1010 | 304 | 4528 | 14.895 | 2367.68 | 7.788 | .523 | 375 | 1.234 | 274.29 | .902 | .731 | 646 | 2.125 | 338.32 | 1.113 | .524 | - | - | - | - | - | 5549 | 18.253 | 2980.29 | 9.804 | .658 | 1529.66 | 5.032 | .338 | 4509.95 | 14.835 | .996 | 66.08 | 33.92 | 6.82 |
| 8-Peach Growers | 1317 | 520 | 3918 | 7.535 | 2154.91 | 4.144 | .550 | 328 | .631 | 247.36 | .476 | .754 | - | - | - | - | - | 147 | .283 | 112.70 | .217 | .767 | 4393 | 8.448 | 2514.97 | 4.836 | .642 | 1346.41 | 2.589 | .344 | 3861.38 | 7.426 | .986 | 65.13 | 34.87 | 5.84 |
| 9-Lasco | 2230 | 2230 | 4984 | 2.235 | 2404.94 | 1.078 | .483 | 598 | .263 | 482.05 | .216 | .806 | 640 | .287 | 348.67 | .156 | .545 | 224 | .100 | 152.87 | .069 | .682 | 6446 | 2.891 | 3383.53 | 1.520 | .680 | 1589.71 | .713 | .319 | 4978.24 | 2.232 | .999 | 68.07 | 31.93 | 7.53 |
| 10-Slagger | 2680 | 23 | 595 | 25.870 | 278.27 | 12.099 | .468 | 83 | 3.609 | 61.13 | 2.658 | .737 | - | - | - | - | - | 18 | .783 | 16.36 | .711 | .909 | 696 | 30.261 | 355.76 | 15.468 | .598 | 124.69 | 5.421 | .210 | 480.45 | 20.889 | .807 | 74.05 | 25.95 | .73 |
| Total | 28,216 | 9,135 | 45,196 | 4.948 | 22,710.36 | 2.486 | .502 | 7000 | .766 | 5,521.48 | .604 | .789 | 3,028 | .332 | 1,617.10 | .177 | .534 | 1,256 | .138 | 840.74 | .092 | .675 | 56,480 | 6.183 | 30,689.68 | 3.360 | .679 | 16,879.86 | 1.848 | .373 | 47,569.54 | 5.207 | 1.053 | 64.52 | 35.48 | 71.92 |
| Percentage Man Hrs. | | | 80.02 | | | | | 12.40 | | | | | 5.36 | | | | | 2.22 | | | | | 100.00 | | | | | | | | | | | | | |
| Percentage Direct Costs | | | | | 74.00 | | | | | 17.99 | | | | | 5.27 | | | | | 2.74 | | | | | 100.00 | | | | | | | | | | | |
| Percentage Total Costs | | | | | 47.74 | | | | | 11.61 | | | | | 3.40 | | | | | 1.77 | | | | | 64.52 | | | 35.48 | | | 100.00 | | | | | |
| Non Camp Projects | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11-Massack | 600 | 510 | 6861 | 13.453 | 3268.99 | 6.410 | .476 | 554 | 1.086 | 425.07 | .833 | .767 | - | - | - | - | - | - | - | - | - | - | 7415 | 14.539 | 3694.06 | 7.243 | .538 | 1,633.71 | 3.203 | .238 | 5327.77 | 10.477 | .777 | 69.34 | 30.66 | 8.06 |
| 12-Manuel | 1240 | 175 | 3037 | 17.357 | 1773.72 | 10.136 | .584 | 115 | .657 | 90.39 | .517 | .786 | - | - | - | - | - | - | - | - | - | - | 3152 | 18.011 | 1864.11 | 10.652 | .614 | 168.81 | .965 | .056 | 2032.92 | 11.617 | .669 | 91.70 | 8.30 | 3.07 |
| 13-N. Warners | 1135 | 205 | 4370 | 21.317 | 2501.06 | 12.200 | .572 | 133 | .649 | 113.10 | .552 | .850 | 12 | .059 | 8.76 | .043 | .730 | 13 | .063 | 11.70 | .057 | .900 | 4528 | 22.088 | 2634.62 | 12.852 | .603 | 812.50 | 3.963 | .186 | 3447.12 | 16.815 | .789 | 76.43 | 23.57 | 5.21 |
| 14-Taylor Creek | 850 | 262 | 5350 | 20.420 | 2562.97 | 9.782 | .479 | 678 | 2.588 | 625.32 | 2.387 | .922 | - | - | - | - | - | - | - | - | - | - | 6028 | 23.008 | 3188.29 | 12.169 | .596 | 966.20 | 3.688 | .181 | 4154.49 | 15.856 | .777 | 76.74 | 23.26 | 6.28 |
| 17-Mabie | 394 | 394 | 3013 | 7.660 | 1431.51 | 3.630 | .474 | 413 | 1.048 | 278.93 | .708 | .675 | 535 | 1.358 | 274.53 | .697 | .513 | 143 | .363 | 100.07 | .254 | .700 | 4109 | 10.429 | 2085.04 | 5.292 | .691 | 132.85 | .337 | .044 | 2217.39 | 5.629 | .735 | 94.01 | 5.99 | 3.35 |
| 18-Burnam | 200 | 140 | 1543 | 10.214 | 780.69 | 5.576 | .506 | 316 | 2.257 | 196.19 | 1.401 | .621 | 257 | 1.836 | 115.64 | .578 | .450 | - | - | - | - | - | 2116 | 15.114 | 1092.52 | 7.804 | .708 | 302.10 | 2.159 | .196 | 1394.82 | 9.963 | .904 | 78.33 | 21.67 | 2.11 |
| Total | 4,419 | 1686 | 24,179 | 14.341 | 12,318.94 | 7.307 | .509 | 2,209 | 1.310 | 1,729.00 | 1.026 | .783 | 804 | .477 | 398.93 | .237 | .496 | 156 | .093 | 111.77 | .066 | .716 | 27,348 | 16.221 | 14,558.64 | 8.635 | .602 | 4,016.37 | 2.382 | .166 | 18,575.01 | 11.017 | .768 | 78.38 | 21.62 | 28.08 |
| Percentage Man Hrs. | | | 88.41 | | | | | 8.08 | | | | | 2.94 | | | | | .57 | | | | | 100.00 | | | | | | | | | | | | | |
| Percentage Direct Costs | | | | 24. | 34.62 | | | | | 11.88 | | | | | 2.74 | | | | | .76 | | | | | 100.00 | | | | | | | | | | | |
| Percentage Total Costs | | | | | 66.32 | | | | | 9.31 | | | | | 2.15 | | | | | .60 | | | | | 78.38 | | | 21.62 | | | 100.00 | | | | | |
| Total all Projects | 32,635 | 10,821 | 69,375 | 6.412 | 35,029.30 | 3.237 | .505 | 9,209 | .851 | 7,250.48 | .670 | .787 | 3,832 | .354 | 2,016.03 | .186 | .526 | 1,412 | .130 | 952.51 | .088 | .675 | 83,828 | 7.747 | 45,248.32 | 4.182 | .652 | 20,896.23 | 1.931 | .301 | 66,144.55 | 6.113 | .953 | 68.41 | 31.59 | 100.00 |
| Percentage Man Hours | | | 82.76 | | | | | 10.99 | | | | | 4.57 | | | | | 1.68 | | | | | 100.00 | | | | | | | | | | | | | |
| Percentage Direct Costs | | | | | 77.42 | | | | | 16.02 | | | | | 4.46 | | | | | 2.10 | | | | | 100.00 | | | | | | | | | | | |
| Percentage Total Costs | | | | | 52.96 | | | | | 10.96 | | | | | 3.05 | | | | | 1.44 | | | | | 68.41 | | | 31.59 | | | 100.00 | | | | | |

TABLE C-2

T H I N N I N G

S

Stand Improvement

| Camp Projects | Gross Acres | Net Acres | LABOR: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Rate Per M.H. | DIRECT SUPERVISION: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Rate Per M.H. | MARKING: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Rate Per M.H. | CHECKING: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Rate Per M.H. | TOTAL DIRECT CHARGES: Man Hours Total | Man Hours Per A. | Costs Total | Costs Per A. | Per EMH Labor | PRORATED COSTS: Total | Per A. | Per EMH Labor | GRAND TOTAL COSTS: Total | Per A. | Per EMH Labor | Percentage of Total Costs Direct | Percentage of Total Costs Prorated | Percent of Total Costs by Projects |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Pilgrim Creek | 4800 | 133 | 2805 | 21.090 | 1338.05 | 10.061 | .477 | 519 | 3.902 | 400.36 | 3.010 | .771 | 406 | 3.053 | 286.36 | 2.153 | .705 | 125 | .940 | 101.46 | .763 | .812 | 3855 | 28.985 | 2126.23 | 15.987 | .758 | 959.21 | 7.212 | .342 | 3085.44 | 23.199 | 1.100 | 68.91 | 31.09 | 19.68 |
| 3-French Creek | 330 | 106 | 2744 | 25.887 | 1246.40 | 11.758 | .454 | 619 | 5.840 | 494.88 | 4.669 | .799 | 635 | 5.991 | 341.82 | 3.225 | .538 | - | - | - | - | - | 3998 | 37.717 | 2083.10 | 19.652 | .759 | 1413.52 | 13.335 | .515 | 3496.62 | 32.987 | 1.274 | 59.57 | 40.43 | 22.30 |
| 4-Logan Mt. | 1296 | 6 | 94 | 15.667 | 42.30 | 7.050 | .450 | 1 | .167 | 1.08 | .180 | 1.080 | 3 | .500 | 1.99 | .332 | .663 | - | - | - | - | - | 98 | 16.333 | 45.37 | 7.562 | .483 | 41.08 | 6.847 | .437 | 86.45 | 14.408 | .920 | 52.48 | 47.52 | .55 |
| 5-Miners Ditch | 1983 | 11 | 236 | 21.455 | 130.50 | 11.864 | .553 | 29 | 2.636 | 22.16 | .201 | .764 | 20 | 1.818 | 12.00 | 1.091 | .600 | 1 | .091 | .75 | .068 | .750 | 286 | 26.000 | 165.41 | 15.037 | .701 | 55.00 | 5.00 | .233 | 220.41 | 20.037 | .934 | 75.05 | 24.95 | 1.40 |
| 6-Browns Sierra | 4690 | 123 | 1476 | 12.004 | 829.38 | 5.610 | .562 | 291 | 2.366 | 185.45 | 1.508 | .637 | 9½ | .077 | 5.26 | .043 | .554 | 26 | .211 | 16.56 | .135 | .637 | 1802 | 14.650 | 1036.65 | 8.428 | .702 | 651.94 | 5.300 | .442 | 1688.59 | 13.728 | 1.144 | 61.39 | 38.61 | 10.77 |
| 7-Meadow Valley | 1010 | 113 | 1674 | 14.814 | 875.42 | 7.745 | .523 | 135 | 1.195 | 97.92 | .867 | .725 | 186 | 1.646 | 92.88 | .823 | .499 | - | - | - | - | - | 1995 | 17.655 | 1066.22 | 9.436 | .637 | 565.45 | 5.006 | .338 | 1631.67 | 14.440 | .975 | 65.35 | 34.65 | 10.41 |
| 8-Peach Growers | 1317 | 71 | 1145 | 16.127 | 630.02 | 8.874 | .550 | 251 | 3.535 | 196.84 | 2.772 | .784 | 94 | 1.324 | 75.00 | 1.056 | .798 | 20 | .282 | 15.68 | .221 | .784 | 1510 | 21.268 | 917.54 | 12.923 | .801 | 448.80 | 6.321 | .392 | 1366.34 | 19.244 | 1.193 | 67.15 | 32.85 | 8.71 |
| 10-Slagger | 2680 | 22 | 747 | 33.955 | 339.35 | 15.425 | .454 | 65 | 2.955 | 43.69 | 1.986 | .672 | 66 | 3.000 | 42.12 | 1.915 | .638 | 1 | .045 | .64 | .029 | .640 | 879 | 39.955 | 425.80 | 19.355 | .570 | 168.03 | 7.637 | .225 | 593.83 | 26.992 | .795 | 71.70 | 28.30 | 3.79 |
| Total | 18,106 | 585 | 10,921 | 18.668 | 5,431.42 | 9.284 | .497 | 1,910 | 3.265 | 1,442.38 | 2.466 | .755 | 1,419 | 2.426 | 857.43 | 1.466 | .604 | 173 | .296 | 135.09 | .231 | .781 | 13,423 | 24.655 | 7,866.32 | 13.447 | .720 | 4,303.03 | 7.356 | .394 | 12,169.35 | 20.802 | 1.114 | 64.64 | 35.36 | 77.61 |
| Percentage Man Hours | | | 75.72 | | | | | 13.24 | | | | | 9.84 | | | | | 1.20 | | | | | 100.00 | | | | | | | | | | | | | |
| Percentage Direct Costs | | | | | 69.05 | | | | | 16.33 | | | | | 10.90 | | | | | 1.72 | | | | | 100.00 | | | | | | | | | | | |
| Percentage Total Costs | | | | | 44.63 | | | | | 11.85 | | | | | 7.05 | | | | | 1.11 | | | | | 64.64 | | | 35.36 | | | 100.00 | | | | | |
| Non Camp Projects | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13-N. Warners | 1135 | 1½ | 27 | 18.000 | 15.40 | 10.267 | .570 | 2 | 1.333 | 1.80 | 1.200 | .900 | - | - | - | - | - | - | - | - | - | - | 29 | 19.333 | 17.20 | 11.467 | .593 | 3.00 | 5.333 | .296 | 25.20 | 16.800 | .933 | 68.25 | 31.75 | .16 |
| 15-S. Warners | 800 | 280 | 4077 | 14.561 | 2242.35 | 8.008 | .550 | 293 | 1.046 | 219.75 | .785 | .750 | 330 | 1.179 | 247.50 | .884 | .750 | 50 | .179 | 48.00 | .171 | .960 | 4750 | 16.964 | 2757.60 | 9.849 | .581 | 727.00 | 2.596 | .178 | 3,484.60 | 12.445 | .855 | 79.14 | 20.86 | 22.23 |
| Total | 1,935 | 281 | 4,104 | 14.605 | 2,257.75 | 8.035 | .550 | 295 | 1.050 | 221.55 | .788 | .751 | 330 | 1.179 | 247.50 | .884 | .750 | 50 | .179 | 48.00 | .171 | .960 | 4,779 | 17.007 | 2,774.80 | 9.875 | .581 | 735.00 | 2.616 | .179 | 3,509.80 | 12.490 | .855 | 79.06 | 20.94 | 22.39 |
| Percentage Man Hours | | | 85.88 | | | | | 6.17 | | | | | 6.91 | | | | | 1.04 | | | | | 100.00 | | | | | | | | | | | | | |
| Percentage Direct Costs | | | | | 81.37 | | | | | 7.98 | | | | | 8.92 | | | | | 1.73 | | | | | 100.00 | | | | | | | | | | | |
| Percentage Total Costs | | | | | 64.33 | | | | | 6.31 | | | | | 7.05 | | | | | 1.37 | | | | | 79.06 | | | 20.94 | | | 100.00 | | | | | |
| Total All Projects | 20,041 | 866 | 15,025 | 17.350 | 7,689.17 | 8.879 | .512 | 2,205 | 2.546 | 1,663.93 | 1.921 | .755 | 1,749 | 2.020 | 1104.93 | 1.276 | .632 | 223 | .258 | 183.09 | .211 | .821 | 19,202 | 22.173 | 10,641.12 | 12.288 | .554 | 5,038.03 | 5.818 | .335 | 15,679.15 | 18.105 | 1.044 | 67.87 | 32.13 | 100.00 |
| Percentage Man Hours | | | 78.25 | | | | | 11.48 | | | | | 9.11 | | | | | 1.16 | | | | | 100.00 | | | | | | | | | | | | | |
| Percentage Direct Costs | | | | | 72.26 | | | | | 15.64 | | | | | 10.38 | | | | | 1.72 | | | | | 100.00 | | | | | | | | | | | |
| Percentage Total Costs | | | | | 49.04 | | | | | 10.61 | | | | | 7.05 | | | | | 1.17 | | | | | 67.87 | | | 32.13 | | | 100.00 | | | | | |
| Total Clean and thin. Camps | 9,720 | | 56,117 | 5.773 | 28,141.78 | 2.895 | .501 | 8,910 | .917 | 6,963.86 | .716 | .782 | 4,447 | .458 | 2474.53 | .255 | .556 | 1,429 | .147 | 975.83 | 1.004 | .683 | 70,903 | 7.295 | 38,556.00 | 3.967 | .687 | 21,182.89 | 2.179 | .377 | 59,733.89 | 6.146 | 1.065 | 64.54 | 35.46 | 73.01 |
| Total Clean and thin Non Camps | 1,967 | 28,283 | 14.379 | 14,576.69 | 7.410 | .515 | 2,504 | 1.273 | 1,950.55 | .992 | .779 | 1,134 | .577 | 646.43 | .329 | .570 | 206 | .105 | 159.77 | .081 | .776 | 32,127 | 16.333 | 17,333.44 | 8.812 | .613 | 4,751.37 | 2.416 | .168 | 22,084.81 | 11.228 | .781 | 78.49 | 21.51 | 26.99 |
| Grand Total Clean and Thin. | 11,687 | 84,400 | 7.222 | 42,718.47 | 3.655 | .506 | 11,414 | .977 | 8,914.41 | .763 | .781 | 5,581 | .478 | 3120.96 | .267 | .559 | 1,635 | .140 | 1135.60 | .097 | .695 | 103,030 | 8.816 | 55,889.44 | 4.782 | .662 | 25,934.26 | 2.219 | .307 | 81,823.70 | 7.001 | .969 | 68.30 | 31.70 | 100.00 |
| Percentage Man Hours | | | 81.92 | | | | | 11.08 | | | | | 5.42 | | | | | 1.58 | | | | | 100.00 | | | | | | | | | | | | | |
| Percentage Direct Costs | | | | | 76.43 | | | | | 15.95 | | | | | 5.59 | | | | | 2.03 | | | | | 100.00 | | | | | | | | | | | |
| Percentage Total Costs | | | | | 52.21 | | | | | 10.89 | | | | | 3.81 | | | | | 1.39 | | | | | 68.30 | | | 31.70 | | | 100.00 | | | | | |

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Stand Improvement

TABLE C-3

Sanitation

2/4/35.

| PROJECTS | | | | | LABOR | | | | | | DIRECT SUPERVISION | | | | | | MARKING | | | | | | TOTAL DIRECT CHARGES | | | | | | PRORATED COSTS | | | | TOTAL COSTS | | | | PERCENTS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Trees: | | MAN HOURS | | | COSTS | | | MAN HOURS | | | COSTS | | | MAN HOURS | | | COSTS | | | MAN HOURS | | | COSTS | | | | | | | | | | | |
| Camp Projects | Acres | No. Trees | Per Acre | Aver. D.B.H. | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Rate Per Hr. | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Per Mo. Hr. | Total | Per Tree | Per Acre | Per Mo. Hr. | Total | Per Tree | Per Acre | Per Mo. Hr. | Direct Costs | Prorated Costs |
| 1. Soquel | 7880 | 4,865 | .62 | 48.6 | 11,188 | 2.298 | 1.418 | 8153.15 | 1.366 | .782 | .550 | 1037 | .213 | .132 | 776.49 | .159 | .097 | 1616 | .334 | .205 | 114.53 | .229 | .141 | 13,841 | 2.847 | 1.755 | 8044.17 | 1.654 | 1.020 | .581 | 2,912.65 | .598 | .369 | .210 | 10956.82 | 2.252 | 1.389 | .791 | 73.417 | 26.583 |
| 2. Pilgrim Creek | 4800 | 1,004 | .21 | 36.6 | 1,503 | 1.495 | .313 | 825.10 | .822 | .172 | .549 | 75 | .075 | .016 | 70.75 | .070 | .015 | 343 | .342 | .051 | 155.33 | .154 | .033 | 1,821 | 1.812 | .380 | 1051.18 | 1.046 | .219 | .577 | 516.30 | .513 | .107 | .283 | 1567.48 | 1.559 | .326 | .860 | 67.062 | 32.938 |
| 3. French Creek | 330 | 85 | .26 | 30.5 | 225 | 2.649 | .682 | 109.27 | 1.284 | .331 | .486 | 57 | .671 | .173 | 45.48 | .535 | .136 | | | | | | | 282 | 3.320 | .855 | 154.75 | 1.819 | .469 | .549 | 115.84 | 1.362 | .351 | .411 | 270.59 | 3.181 | .820 | .960 | 57.190 | 42.810 |
| 5. Miners Ditch | 1983 | 13 | .01 | | 13 | 1.000 | .007 | 7.15 | .550 | .004 | .560 | | | | .83 | .064 | .000 | | | | | | | 13 | 1.000 | .007 | 7.98 | .614 | .004 | .614 | 10.08 | .776 | .005 | .776 | 18.06 | 1.390 | .009 | 1.390 | 44.186 | 55.814 |
| 6. Brown's Sierra | 4690 | 519 | .11 | 42.31 | 678.5 | 1.307 | .145 | 373.39 | .719 | .080 | .550 | 58 | .112 | .012 | 43.47 | .083 | .009 | 2.75 | .006 | .001 | 1.54 | .003 | .000 | 735.25 | 1.424 | .158 | 418.30 | .806 | .089 | .566 | 367.19 | .515 | .057 | .361 | 585.69 | 1.320 | .146 | .927 | 61.328 | 38.672 |
| 7. Meadow Valley | 1010 | 193 | .19 | 21.5 | 115 | .596 | .114 | 62.99 | .326 | .062 | .548 | 1 | .005 | .001 | .59 | .003 | .001 | | | | | | | 116 | .601 | .115 | 63.57 | .329 | .063 | .548 | 38.76 | .201 | .038 | .334 | 102.33 | .530 | .101 | .882 | 62.123 | 37.877 |
| 8. Peach Growers | 1317 | 85 | .06 | | 68.5 | .806 | .052 | 37.67 | .443 | .029 | .550 | 7.75 | .091 | .006 | 5.05 | .071 | .005 | | | | | | | 76.25 | .897 | .058 | 43.72 | .514 | .034 | .573 | 20.40 | .240 | .015 | .267 | 64.12 | .754 | .049 | .840 | 68.185 | 31.815 |
| 9. Lasco | 2230 | 12 | .01 | | 4 | .333 | .002 | 1.80 | .150 | .001 | .450 | | | | | | | | | | | | | 4 | .333 | .002 | 1.80 | .150 | .001 | .450 | .98 | .082 | .000 | .248 | 2.78 | .232 | .001 | .698 | 64.748 | 35.252 |
| 10. Sleeper | 2680 | 1,261 | .47 | 34.7 | 1,400 | 1.110 | .522 | 770.00 | .611 | .287 | .550 | 94 | .074 | .035 | 76.02 | .060 | .028 | 89 | .070 | .033 | 41.55 | .033 | .016 | 1583 | 1.254 | .590 | 887.57 | .704 | .331 | .561 | 268.67 | .212 | .100 | .169 | 1175.24 | .933 | .438 | .744 | 75.456 | 24.542 |
| Sub-Totals | 26,920 | 8,037 | .299 | 43.6 | 15,195 | 1.891 | .565 | 8340.41 | 1.037 | .310 | .549 | 1329.75 | .165 | .049 | 1019.68 | .127 | .038 | 1950 | .243 | .073 | 1312.96 | .163 | .049 | 18,475.50 | 2.299 | .687 | 10673.04 | 1.327 | .397 | .578 | 4190.87 | .519 | .155 | .226 | 14843.91 | 1.846 | .552 | .804 | 71.908 | 28.098 |
| Percent, Direct Cost | | | | | | | | 78.145 | | | | | | | 9.554 | | | | | | 12.301 | | | | | | 100.000 | | | | | | | | | | | |
| Percent, Total Cost | | | | | | | | 56.188 | | | | | | | 6.869 | | | | | | 8.845 | | | | | | 71.902 | | | | 28.098 | | | | 100.00 | | | | | |
| Non-Camp Projects | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. Wasaack | 600 | 539 | .90 | 23.4 | 362 | .672 | .603 | 190.88 | .354 | .318 | .527 | 33 | .061 | .055 | 26.73 | .048 | .043 | 21 | .039 | .036 | 32.25 | .060 | .054 | 416 | .772 | .693 | 248.86 | .462 | .415 | .599 | 86.11 | .160 | .143 | .207 | 334.97 | .622 | .558 | .806 | 74.292 | 25.707 |
| 12. Manuel Est. | 1240 | 238 | .19 | 26.0 | 265 | 1.198 | .250 | 175.91 | .738 | .142 | .817 | 47 | .052 | .041 | 11.70 | .049 | .009 | | | | | | | 265 | 1.198 | .230 | 187.61 | .787 | .151 | .858 | 15.46 | .069 | .013 | .058 | 204.07 | .856 | .164 | .715 | 91.934 | 8.066 |
| 13. W. Warners | 1135 | 918 | .80 | 20.0 | 515 | .565 | .454 | 313.76 | .344 | .276 | .608 | 47 | .052 | .041 | 42.40 | .046 | .037 | 40 | .044 | .035 | 29.25 | .032 | .026 | 602 | .661 | .530 | 385.41 | .422 | .339 | .640 | 100.00 | .110 | .088 | .166 | 485.41 | .532 | .427 | .806 | 79.399 | 20.501 |
| 14. Taylor Creek | 850 | 178 | .21 | 26.2 | 361 | 2.050 | .425 | 174.69 | .992 | .205 | .484 | 18 | .102 | .021 | 19.83 | .113 | .023 | 13 | .074 | .015 | 15.20 | .086 | .018 | 392 | 2.226 | .461 | 209.72 | 1.191 | .246 | .535 | 65.24 | .371 | .077 | .166 | 274.96 | 1.562 | .323 | .701 | 76.273 | 23.727 |
| 15. S. Warners | 800 | 401 | .63 | 24.0 | 540 | 1.376 | .900 | 354.20 | .707 | .443 | .563 | 50 | .100 | .062 | 48.00 | .096 | .060 | | | | | | | 590 | 1.376 | .863 | 402.20 | .803 | .503 | .583 | 118.00 | .236 | .147 | .171 | 520.20 | 1.039 | .650 | .754 | 77.314 | 22.684 |
| 16. Mohawk | 880 | 1565 | 1.76 | 22.6 | 1438 | .931 | 1.634 | 756.35 | .489 | .859 | .526 | | | | | | | | | | | | | 1438 | .931 | 1.634 | 756.35 | .489 | .859 | .526 | 153.67 | .099 | .174 | .107 | 910.02 | .588 | 1.033 | .633 | 83.123 | 16.877 |
| Sub-Totals | 5,505 | 3911 | .711 | 22.6 | 3601 | .921 | .654 | 1965.79 | .503 | .357 | .546 | 148 | .038 | .027 | 147.66 | .038 | .027 | 74 | .019 | .013 | 76.70 | .020 | .014 | 3823 | .978 | .694 | 2190.15 | .560 | .398 | .572 | 539.38 | .138 | .098 | .141 | 2729.53 | .698 | .496 | .713 | 80.239 | 19.761 |
| Percent, Direct Cost | | | | | | | | 89.756 | | | | | | | 6.742 | | | | | | 3.502 | | | | | | 100.000 | | | | | | | | | | | |
| Percent, Total Cost | | | | | | | | 72.019 | | | | | | | 5.410 | | | | | | 2.810 | | | | | | 80.239 | | | | 19.761 | | | | 100.00 | | | | | |
| Totals | 32,425 | 11,948 | .369 | 36.7 | 18,796 | 1.573 | .579 | 10,306.20 | .863 | .318 | .548 | 1477.75 | .124 | .046 | 1167.34 | .098 | .036 | 2080 | .169 | .062 | 1389.66 | .116 | .043 | 22,298.50 | 1.866 | .687 | 12853.19 | 1.077 | .397 | .577 | 4710.25 | .394 | .145 | .211 | 17,573.44 | 1.471 | .542 | .788 | 73.197 | 26.803 |
| Percent, Direct Cost | | | | | | | | 80.122 | | | | | | | 9.076 | | | | | | 10.803 | | | | | | 100.000 | | | | | | | | | | | |
| Percent, Total Cost | | | | | | | | 58.646 | | | | | | | 6.643 | | | | | | 7.908 | | | | | | 73.197 | | | | 26.803 | | | | 100.000 | | | | | |

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Stand Improvement

TABLE C-4

LIBERATION

2-4-35

| PROJECT | | | | | LABOR | | | | | | DIRECT SUPERVISION | | | | | | MARKING | | | | | | TOTAL DIRECT CHARGES | | | | | | PRORATED COSTS | | | | TOTAL COSTS | | | | PERCENTS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Trees | | Man Hours | | | Costs | | | Man Hours | | | Costs | | | Man Hours | | | Costs | | | Man Hours | | | Costs | | | | | | | | | | | |
| Camp Projects | Acres | No. Trees | Per Acre | Avg. DBH | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Rate Per Hr. | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Total | Per Tree | Per Acre | Per Month | Total | Per Tree | Per Acre | Per Month | Total | Per Tree | Per Acre | Per M.H. | Direct Costs | Prorata Costs |
| 1-Soquel | 7880 | 4 | .0005 | 41.0 | 16 | 4.00 | .002 | 8.80 | 2.20 | .001 | .550 | - | - | - | - | - | - | - | - | - | - | - | - | 16 | 4.0 | .002 | 8.80 | 2.20 | .001 | .55 | 3.60 | .90 | .0005 | .225 | 12.40 | 3.10 | .002 | .775 | 70.968 | 29.032 |
| 2-Pilgrim Creek | 4800 | 108 | .023 | - | 79 | .731 | .016 | 43.35 | .401 | .009 | .549 | 15 | .139 | .003 | 14.08 | .130 | .003 | 151 | 1.398 | .031 | 103.40 | .957 | .022 | 245 | 2.269 | .051 | 160.83 | 1.489 | .034 | .656 | 78.58 | .727 | .016 | .321 | 239.41 | 2.22 | .050 | .977 | 67.178 | 32.822 |
| 3-French Creek | 330 | 1374 | 4.164 | 23.5 | 2126 | 1.548 | 6.442 | 1013.48 | .738 | 3.071 | .477 | 279 | .203 | .845 | 233.65 | .170 | .708 | - | - | - | - | - | - | 2405 | 1.750 | 7.287 | 1247.13 | .908 | 3.779 | .518 | 1094.97 | .797 | 3.318 | .455 | 2342.10 | 1.705 | 7.097 | .973 | 53.248 | 46.752 |
| 5-Miners Ditch | 1983 | 189 | .095 | - | 112 | .587 | .056 | 61.52 | .326 | - | .549 | - | - | - | 10.79 | .057 | - | - | - | - | - | - | - | 112 | .593 | .056 | 72.31 | .383 | .036 | .644 | 27.46 | .145 | .014 | .245 | 99.77 | .526 | .050 | .891 | 72.477 | 27.523 |
| 6-Browns Sierra | 4690 | 537 | .115 | 20.8 | 420 | .782 | .090 | 231.70 | .432 | .049 | .552 | 37 | .069 | .008 | 25.70 | .048 | .005 | 55 | .102 | .012 | 30.60 | .057 | .007 | 512 | .953 | .109 | 288.00 | .536 | .061 | .563 | 185.05 | .345 | .039 | .361 | 473.05 | .881 | .100 | .924 | 60.882 | 39.118 |
| 7-Meadow Valley | 1010 | 576 | .570 | 14.3 | 352 | .611 | .349 | 173.60 | .301 | .172 | .493 | 24 | .042 | .024 | 15.11 | .026 | .015 | - | - | - | - | - | - | 376 | .653 | .372 | 188.71 | .327 | .187 | .502 | 119.03 | .207 | .118 | .317 | 307.74 | .534 | .305 | .819 | 61.321 | 38.679 |
| 8-Peach Growers | 1317 | 64 | .047 | 20.7 | 50 | .781 | .038 | 27.50 | .430 | .021 | .550 | 10 | .156 | .008 | 7.18 | .112 | .005 | - | - | - | - | - | - | 60 | .938 | .046 | 34.68 | .542 | .026 | .578 | 20.40 | .319 | .015 | .340 | 55.08 | .861 | .041 | .918 | 62.963 | 37.037 |
| 9-Lasco | 2230 | 72 | .032 | - | 16 | .222 | .007 | 8.80 | .122 | .044 | .550 | - | - | - | - | - | - | - | - | - | - | - | - | 16 | .222 | .007 | 8.80 | .122 | .004 | .550 | 3.90 | .054 | .002 | .244 | 12.70 | .176 | .006 | .794 | 65.291 | 30.709 |
| Sub-totals | 24,240 | 2924 | .121 | 21.1 | 3171 | 1.085 | .131 | 1568.75 | .536 | .065 | .495 | 365 | .125 | .015 | 306.51 | .105 | .012 | 206 | .070 | .008 | 134.00 | .046 | .006 | 3742 | 1.280 | .154 | 2069.26 | .687 | .083 | .537 | 1532.99 | .524 | .063 | .409 | 3542.25 | 1.211 | .146 | .946 | 56.723 | 43.277 |
| Percent Direct Cost | - | - | - | - | - | - | - | 78.076 | - | - | - | - | - | - | 15.255 | - | - | - | - | - | 6.669 | - | - | - | - | - | 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| Percent Total Cost | - | - | - | - | - | - | - | 44.287 | - | - | - | - | - | - | 8.653 | - | - | - | - | - | 3.783 | - | - | - | - | - | 56.723 | - | - | - | 43.277 | - | - | - | 100.00 | - | - | - | - | - |
| Non Camp Projects | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12-Manual | 1240 | 4262 | 3.755 | 21.0 | 5455 | 1.280 | 4.399 | 3169.20 | .744 | 2.556 | .583 | - | - | - | 193.50 | .045 | .156 | - | - | - | - | - | - | 5455 | 1.281 | 4.399 | 3362.70 | .789 | 2.712 | .616 | 283.98 | .067 | .229 | .052 | 3646.68 | .856 | 2.941 | .668 | 92.213 | 7.787 |
| 13-W. Warner | 1335 | 31 | .023 | - | 15 | .484 | .012 | 8.21 | .265 | .007 | .549 | 4 | .129 | .004 | 1.60 | .116 | .003 | - | - | - | - | - | - | 19 | .613 | .016 | 11.81 | .381 | .010 | .622 | 4.23 | .137 | .004 | .223 | 16.04 | .518 | .014 | .845 | 73.628 | 26.372 |
| Sub-totals | 2375 | 4293 | 1.806 | 21.0 | 5470 | 1.275 | 2.301 | 3177.41 | .740 | 1.337 | .581 | 4 | .001 | .002 | 197.10 | .046 | .083 | - | - | - | - | - | - | 5474 | 1.276 | 2.303 | 3374.51 | .786 | 1.420 | .617 | 288.21 | .067 | .121 | .053 | 3662.72 | .853 | 1.541 | .670 | 92.131 | 7.869 |
| Percent Direct Cost | - | - | - | - | - | - | - | 94.159 | - | - | - | - | - | - | 5.841 | - | - | - | - | - | - | - | - | - | - | - | 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| Percent Total Cost | - | - | - | - | - | - | - | 86.750 | - | - | - | - | - | - | 5.381 | - | - | - | - | - | - | - | - | - | - | - | 92.131 | - | - | - | 7.869 | - | - | - | 100.000 | - | - | - | - | - |
| Totals | 26,615 | 7217 | .271 | 21.0 | 8641 | 1.197 | .324 | 4746.16 | .657 | .178 | .549 | 369 | .051 | .014 | 503.61 | .070 | .019 | 206 | .028 | .008 | 134.00 | .019 | .005 | 9216 | 1.276 | .346 | 5383.77 | .747 | .202 | .584 | 1821.20 | .252 | .068 | .198 | 7204.97 | .998 | .270 | .782 | 74.723 | 25.277 |
| Percent Direct Cost | - | - | - | - | - | - | - | 88.157 | - | - | - | - | - | - | 9.354 | - | - | - | - | - | 2.489 | - | - | - | - | - | 100.000 | - | - | - | - | - | - | - | - | - | - | - | - |
| Percent Total Cost | - | - | - | - | - | - | - | 65.873 | - | - | - | - | - | - | 6.990 | - | - | - | - | - | 1.860 | - | - | - | - | - | 74.723 | - | - | - | 25.277 | - | - | - | 100.000 | - | - | - | - | - |

S
Stand Improvement

TABLE C-5

SNAG DISPOSAL

2/4/35.

PROJECT

| Camp Projects | Acres | No. Trees | Trees: Avg. Per Ac. | D.B.H. | LABOR: MAN HOURS: Total | MAN HOURS: Per Tree | MAN HOURS: Per Acre | LABOR: COSTS: Total | COSTS: Per Tree | COSTS: Per Acre | COSTS: Per Mn. Hr. | DIRECT SUPERVISION: MAN HOURS: Total | MAN HOURS: Per Tree | MAN HOURS: Per Acre | DIRECT SUPERVISION: COSTS: Total | COSTS: Per Tree | COSTS: Per Acre | MARKING: MAN HOURS: Total | MAN HOURS: Per Tree | MAN HOURS: Per Acre | MARKING: COSTS: Total | COSTS: Per Tree | COSTS: Per Acre | TOTAL DIRECT CHARGES: MAN HOURS: Total | MAN HOURS: Per Tree | MAN HOURS: Per Acre | TOTAL DIRECT CHARGES: COSTS: Total | COSTS: Per Tree | COSTS: Per Acre | COSTS: Per Mn.Hr. | PRORATED COSTS: Total | PRORATED COSTS: Per Tree | PRORATED COSTS: Per Acre | PRORATED COSTS: Per Mn. Hr. | TOTAL COSTS: Total | TOTAL COSTS: Per Tree | TOTAL COSTS: Per Acre | TOTAL COSTS: Per Mn. Hr. | PERCENTS: Direct Costs | PERCENTS: Prorated Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Soquel | 7880 | 14,392 | 1.83 | 32.4 | 18553 | 1.289 | 2.354 | 10204.40 | .709 | 1.295 | .550 | 1205 | .084 | .153 | 903.21 | .063 | .114 | 250 | .018 | .033 | 161.42 | .011 | .021 | 20018 | 1.391 | 2.540 | 11269.03 | .783 | 1.430 | .562 | 4084.90 | .284 | .518 | .305 | 15,353.93 | 1.067 | 1.948 | .767 | 73.395 | 26.605 |
| 2. Pilgrim Creek | 4800 | 6,260 | 1.30 | 36.6 | 6198 | .990 | 1.291 | 3398.95 | .543 | .708 | .549 | 392 | .063 | .082 | 330.48 | .053 | .069 | 722 | .115 | .150 | 400.58 | .064 | .083 | 7312 | 1.168 | 1.523 | 4130.01 | .660 | .860 | .565 | 1926.85 | .307 | .402 | .363 | 6,056.86 | .967 | 1.262 | .688 | 68.194 | 31.806 |
| 3. French Creek | 330 | 1,303 | 3.95 | 27.7 | 1422 | 1.091 | 4.309 | 711.85 | .546 | 2.152 | .501 | 62 | .048 | .188 | 47.25 | .036 | .143 | 6 | .005 | .018 | 3.51 | .003 | .016 | 1490 | 1.144 | 4.515 | 762.61 | .585 | 2.311 | .512 | 733.37 | .563 | 2.222 | .492 | 1,495.98 | 1.148 | 4.533 | 1.004 | 50.977 | 49.023 |
| 4. Logan Mt. | 1296 | 2,186 | 1.69 | | 1036 | .474 | .799 | 477.72 | .219 | .369 | .462 | 4 | .002 | .003 | 4.33 | .002 | .003 | 112 | .051 | .086 | 50.40 | .023 | .039 | 1152 | .527 | .888 | 532.45 | .244 | .411 | .462 | 482.93 | .221 | .373 | .419 | 1,015.38 | .465 | .784 | .881 | 52.438 | 47.562 |
| 5. Miners Ditch | 1983 | 4,944 | 2.49 | 20.0 | 2340 | .473 | 1.181 | 1278.18 | .259 | .645 | .546 | | | | 274.57 | .056 | .139 | | | | | | | 2340 | .473 | 1.181 | 1552.75 | .315 | .784 | .663 | 576.71 | .116 | .290 | .246 | 2,129.46 | .431 | 1.074 | .910 | 72.918 | 27.082 |
| 6. Brown's Sierra | 4690 | 6,275 | 1.34 | 26.6 | 4803.25 | .765 | 1.024 | 2645.81 | .422 | .564 | .551 | 375 | .060 | .080 | 274.44 | .044 | .058 | 298 | .048 | .064 | 208.69 | .033 | .045 | 5476.25 | .873 | 1.348 | 3128.94 | .498 | .667 | .572 | 1979.31 | .315 | .422 | .361 | 5,108.25 | .813 | 1.089 | .933 | 61.253 | 38.747 |
| 7. Meadow Valley | 1010 | 1,356 | 1.34 | 20.8 | 773 | .570 | .765 | 403.42 | .298 | .399 | .522 | 10 | .007 | .010 | 6.69 | .005 | .007 | 48 | .035 | .048 | 26.40 | .019 | .026 | 831 | .612 | .823 | 436.51 | .322 | .432 | .524 | 247.57 | .183 | .245 | .298 | 684.08 | .506 | .677 | .822 | 63.810 | 36.190 |
| 8. Peach Growers | 1317 | 793 | .60 | 19.4 | 620.25 | .782 | .471 | 341.14 | .430 | .259 | .550 | 33.75 | .043 | .026 | 24.24 | .031 | .018 | | | | | | | 654 | .825 | .491 | 365.38 | .461 | .277 | .568 | 204.00 | .257 | .155 | .312 | 569.38 | .718 | .432 | .870 | 44.172 | 55.828 |
| 9. Lasco | 2230 | 109 | .20 | | 115 | 1.064 | .052 | 82.50 | .537 | .026 | .505 | 8 | .073 | .004 | 8.57 | .080 | .004 | 15 | .147 | .007 | 10.90 | .098 | .005 | 140 | 1.284 | .063 | 77.97 | .715 | .035 | .557 | 34.14 | .313 | .015 | .244 | 112.11 | 1.028 | .050 | .801 | 69.548 | 30.452 |
| 10. Slagger | 2580 | 4,040 | 1.51 | 34.7 | 3394 | .840 | 1.266 | 1865.70 | .462 | .697 | .550 | 378 | .093 | .141 | 304.08 | .075 | .113 | 357 | .088 | .134 | 165.20 | .041 | .062 | 4129 | 1.021 | 1.541 | 2335.98 | .578 | .872 | .566 | 758.39 | .188 | .283 | .183 | 3,094.37 | .766 | 1.156 | .749 | 75.421 | 24.579 |
| Sub-Totals | 28216 | 41,558 | 1.476 | 30.0 | 39255.50 | .943 | 1.390 | 21386.67 | .513 | .757 | .545 | 2467.75 | .059 | .087 | 2177.96 | .053 | .077 | 1819 | .044 | .064 | 1027.00 | .025 | .036 | 43542.25 | 1.046 | 1.541 | 24591.63 | .591 | .870 | .564 | 11027.67 | .265 | .391 | .253 | 35,619.30 | .856 | 1.261 | .817 | 69.040 | 30.960 |
| Percent, Direct Cost | | | | | | | | 86.967 | | | | | | | 8.857 | | | | | | 4.176 | | | | | | 100.00 | | | | | | | | | | | | | |
| Percent, Total Cost | | | | | | | | 60.043 | | | | | | | 6.114 | | | | | | 2.983 | | | | | | 69.040 | | | | 30.960 | | | | 100.00 | | | | | |
| Non-Camp Projects | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. Massack | 600 | 2,020 | 3.37 | 24.5 | 1694 | .839 | 2.823 | 929.97 | .460 | 1.550 | .548 | | | | | | | 77 | .038 | .128 | 53.71 | .027 | .089 | 1771 | .877 | 2.951 | 983.68 | .487 | 1.639 | .565 | 403.51 | .200 | .673 | .238 | 1,387.19 | .687 | 2.313 | .783 | 70.912 | 29.088 |
| 12. Manuel Kat. | 1240 | 3,430 | 2.77 | 23.0 | 3942 | 1.149 | 3.179 | 2282.55 | .665 | 1.841 | .579 | | | | 28.12 | .008 | .023 | | | | | | | 3942 | 1.149 | 3.179 | 2310.67 | .673 | 1.864 | .586 | 205.54 | .060 | .166 | .052 | 2,516.21 | .733 | 2.030 | .638 | 91.831 | 8.169 |
| 13. N. Warners | 1135 | 3,203 | 2.82 | 22.0 | 1775 | .554 | 1.564 | 1007.09 | .315 | .887 | .568 | 48 | .015 | .042 | 52.30 | .016 | .046 | 54 | .017 | .048 | 50.50 | .016 | .045 | 1877 | .586 | 1.654 | 1109.89 | .346 | .978 | .591 | 325.00 | .101 | .286 | .173 | 1,434.89 | .448 | 1.264 | .764 | 77.350 | 22.650 |
| 14. Taylor Creek | 850 | 936 | 1.10 | 22.4 | 606 | .647 | .713 | 333.21 | .356 | .392 | .552 | | | | | | | 67 | .072 | .079 | 74.55 | .080 | .088 | 673 | .719 | .792 | 407.76 | .436 | .480 | .606 | 109.39 | .117 | .129 | .162 | 517.15 | .553 | .609 | .768 | 78.848 | 21.152 |
| 15. S. Warners | 800 | 432 | .54 | 26.0 | 563 | 1.303 | .705 | 309.65 | .717 | .387 | .550 | 60 | .139 | .075 | 57.60 | .133 | .072 | | | | | | | 623 | .499 | .780 | 367.25 | .850 | .459 | .589 | 104.00 | .241 | .130 | .167 | 471.25 | 1.091 | .589 | .756 | 77.931 | 22.069 |
| 16. Mohawk | 880 | 6517 | 7.41 | 19.4 | 5204 | .799 | 5.914 | 2737.20 | .420 | 3.110 | .525 | | | | | | | | | | | | | 5204 | .799 | 5.914 | 2737.20 | .420 | 3.110 | .525 | 555.74 | .085 | .632 | .107 | 3,292.94 | .506 | 3.742 | .632 | 83.123 | 16.877 |
| 17. Mabie | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18. Burnam | 200 | 421 | 2.10 | 25.02 | 431 | 1.024 | 2.155 | 243.23 | .578 | 1.216 | .565 | | | | | | | 76 | .180 | .380 | 50.62 | .120 | .253 | 507 | 1.204 | 2.536 | 293.85 | .698 | 1.469 | .579 | 84.43 | .201 | .423 | .167 | 378.28 | .899 | 1.891 | .746 | 77.681 | 22.319 |
| Sub-Totals | 5705 | 16,959 | 2,973 | 21.7 | 14,215 | .838 | 2.490 | 7842.90 | .463 | 1.374 | .552 | 108 | .006 | .019 | 138.02 | .008 | .024 | 274 | .016 | .048 | 229.38 | .014 | .040 | 14,597 | .860 | 2.557 | 8210.30 | .486 | 1.438 | .562 | 1787.61 | .105 | .314 | .123 | 9,997.91 | .590 | 1.752 | .685 | 82.120 | 17.880 |
| Percent, Direct Cost | | | | | | | | 95.525 | | | | | | | 1.681 | | | | | | 2.794 | | | | | | 100.000 | | | | | | | | | | | | | |
| Percent, Total Cost | | | | | | | | 78.445 | | | | | | | 1.381 | | | | | | 2.294 | | | | | | 82.120 | | | | 17.880 | | | | 100.00 | | | | | |
| Totals | 33921 | 58,617 | 1.728 | 27.5 | 53470.50 | 1.912 | 1.576 | 29229.57 | .499 | .862 | .547 | 2575.75 | .044 | .076 | 2315.98 | .040 | .068 | 2093 | .036 | .062 | 1256.38 | .021 | .037 | 58,139.25 | .992 | 1.714 | 32,801.93 | .560 | .967 | .565 | 12815.18 | .219 | .378 | .220 | 45,617.11 | .778 | 1.345 | .785 | 71.907 | 28.093 |
| Percent, Direct Cost | | | | | | | | 89.109 | | | | | | | 7.061 | | | | | | 3.830 | | | | | | 100.00 | | | | | | | | | | | | | |
| Percent, Total Cost | | | | | | | | 64.076 | | | | | | | 5.077 | | | | | | 2.754 | | | | | | 71.907 | | | | 28.093 | | | | 100.00 | | | | | |

S
Stand Improvement

TABLE C-6

SLASH DISPOSAL

2/4/35

| Camp Projects | Acres Gross | LABOR: Man Hours: Total | Man Hours: Per Acre | Costs: Total | Costs: Per Acre | Rate Per Hr. | DIRECT SUPERVISION: Man Hours: Total | Man Hours: Per Acre | Costs: Total | Costs: Per Acre | TOTAL DIRECT CHARGES: Man Hours: Total | Man Hours: Per Acre | Costs: Total | Costs: Per Acre | PRORATED COSTS: Total | PRORATED COSTS: Per Acre | TOTAL COSTS: Total | TOTAL COSTS: Per Acre | PERCENTS: Direct | PERCENTS: Prorated |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Soquel | 7880 | 16 | .002 | 8.80 | .001 | .550 | - | - | - | - | 16 | .002 | 8.80 | .001 | 3.60 | .001 | 12.40 | .002 | 70.968 | 29.032 |
| 2-Pilgrim Creek | 4800 | 1522 | .317 | 708.30 | .147 | .456 | 265 | .055 | 174.47 | .036 | 1787 | .372 | 882.77 | .184 | 328.90 | .068 | 1211.67 | .252 | 72.856 | 27.144 |
| 3-French Creek | 330 | 2975 | 9.015 | 1345.45 | 4.077 | .453 | 507 | 1.536 | 421.29 | 1.277 | 3482 | 10.551 | 1766.74 | 5.354 | 1532.49 | 4.644 | 3299.23 | 9.998 | 53.550 | 46.450 |
| 4-Logan Mountain | 1296 | 1296 | 1.000 | 590.40 | .456 | .456 | 135 | .104 | 101.58 | .078 | 1431 | 1.104 | 691.98 | .534 | 599.88 | .462 | 1291.86 | .996 | 53.565 | 46.435 |
| 6-Browns Sierra | 4690 | 22 | .005 | 13.13 | .003 | .597 | - | - | - | - | 22 | .005 | 13.13 | .003 | 7.95 | .002 | 21.08 | .005 | 62.287 | 37.713 |
| 9-Lasco | 2230 | 516 | .231 | 237.01 | .106 | .459 | 41 | .018 | 32.08 | .014 | 557 | .249 | 269.09 | .120 | 135.81 | .061 | 404.90 | .181 | 66.458 | 33.542 |
| Sub-Totals | 21,226 | 6347 | .299 | 2903.09 | .137 | .457 | 948 | .045 | 729.42 | .034 | 7295 | .344 | 3632.51 | .171 | 2608.63 | .123 | 6241.14 | .294 | 58.203 | 41.797 |
| Percent Direct Cost | - | - | - | 79.920 | - | - | - | - | 20.080 | - | - | - | 100.000 | - | - | - | - | - | - | - |
| Percent Total Cost | - | - | - | 46.516 | - | - | - | - | 11.687 | - | - | - | 58.203 | - | 41.797 | - | 100.000 | - | - | - |
| Non-Camp Projects | | | | | | | | | | | | | | | | | | | | |
| 11-Massack | 600 | 3999 | 6.665 | 1829.82 | 3.050 | .457 | 146 | .243 | 115.91 | .193 | 4145 | 6.908 | 1945.73 | 3.243 | 952.18 | 1.587 | 2897.91 | 4.830 | 67.143 | 32.857 |
| 14-Taylor Creek | 850 | 134 | .158 | 63.13 | .074 | .471 | 10 | .012 | 7.13 | .008 | 144 | .170 | 70.26 | .082 | 24.24 | .029 | 94.50 | .111 | 74.349 | 25.651 |
| 15-S. Warners | 800 | 150 | .188 | 82.50 | .103 | .550 | 5 | .006 | 4.80 | .006 | 155 | .194 | 87.30 | .109 | 28.00 | .035 | 115.30 | .144 | 75.716 | 24.284 |
| 17-Mabie | 394 | 982 | 2.492 | 441.90 | 1.121 | .450 | 14 | .036 | 11.08 | .028 | 996 | 2.528 | 452.98 | 1.149 | - | - | 452.98 | 1.149 | 100.000 | - |
| 18-Burnam | 200 | 153 | .765 | 68.60 | .343 | .450 | - | - | - | - | 153 | .765 | 68.60 | .343 | 30.00 | .150 | 98.60 | .493 | 69.574 | 30.426 |
| Sub-Totals | 2844 | 5418 | 1.905 | 2485.95 | .874 | .459 | 175 | .062 | 138.92 | .049 | 5593 | 1.967 | 2624.87 | .923 | 1034.42 | .364 | 3659.29 | 1.287 | 71.732 | 28.268 |
| Percent Direct Cost | - | - | - | 94.708 | - | - | - | - | 5.292 | - | - | - | 100.000 | - | - | - | - | - | - | - |
| Percent Total Cost | - | - | - | 67.935 | - | - | - | - | 3.800 | - | - | - | 71.732 | - | 28.268 | - | 100.000 | - | - | - |
| Totals | 24,060 | 11,765 | .489 | 5389.04 | .224 | .458 | 1123 | .047 | 868.34 | .036 | 12,888 | .536 | 6257.38 | .260 | 3643.05 | .151 | 9900.43 | .411 | 63.203 | 36.797 |
| Percent Direct Cost | - | - | - | 86.123 | - | - | - | - | 13.877 | - | - | - | 100.000 | - | - | - | - | - | - | - |
| Percent Total Cost | - | - | - | 54.432 | - | - | - | - | 8.771 | - | - | - | 63.203 | - | 36.797 | - | 100.000 | - | - | - |

2/4/35.

TABLE D

COLLECTION OF PRORATION CHARGES

| Camp Projects | Gross Acres | Total Effective Man Hrs. | SUPERVISION Costs Total | Per A. | Per E.M.H. | SUBSISTENCE Costs Total | Per A. | Per E.M.H. | CAMP HOUSING Costs Total | Per A. | Per E.M.H. | SMALL TOOLS Costs Total | Per A. | Per E.M.H. | TRANSPORTATION Costs Total | Per A. | Per E.M.H. | MISCELLANEOUS Costs Total | Per A. | Per E.M.H. | Sub-Total | TOTAL Costs Total | Per A. | Per E.M.H. | DISTRIBUTION Cleaning Amount | % | Thinning Amount | % | Sanitation Amount | % | Liberation Amount | % | Snag Disposal Amount | % | Slash Disposal Amount | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Soquel | 7880 | 30,357 | 1281.95 | .163 | .042 | 830.83 | .105 | .027 | 2416.47 | .307 | .080 | 654.98 | .083 | .022 | 677.01 | .086 | .022 | 1330.50 | .169 | .044 | | 7191.74 | .913 | .237 | 186.99 | 2.60 | | | 2912.65 | 40.50 | 3.50 | .05 | 4084.90 | 56.80 | 3.50 | .05 |
| 2. Pilgrim Creek | 4800 | 17,358 | 1699.00 | .354 | .098 | 1371.87 | .286 | .079 | 1461.33 | .304 | .084 | 540.24 | .113 | .031 | 404.22 | .084 | .023 | 24.41 | .005 | .001 | | 5501.07 | 1.146 | .317 | 1691.83 | 30.75 | 959.21 | 17.44 | 516.30 | 9.39 | 78.58 | 1.43 | 1926.25 | 35.01 | 328.90 | 5.98 |
| 3. French Creek | 330 | 15,192 | 1956.41 | 5.959 | .129 | 1334.27 | 4.043 | .088 | 1739.42 | 5.271 | .114 | 757.56 | 2.296 | .050 | 610.33 | 1.849 | .040 | 1418.83 | 4.299 | .093 | | 7626.82 | 23.713 | .515 | 2936.63 | 37.52 | 1413.52 | 18.06 | 115.84 | 1.48 | 1094.97 | 13.99 | 733.37 | 9.37 | 1532.49 | 19.58 |
| 4. Logan Mt. | 1296 | 11,838 | 1518.53 | 1,172 | .128 | 1045.38 | .907 | .088 | 1516.72 | 1.170 | .128 | .30 | | | 211.16 | .163 | .018 | 1457.47 | 1.125 | .123 | | 5749.56 | 4.436 | .486 | 4525.67 | 80.45 | 41.08 | .71 | | | | | 482.93 | 8.40 | 599.88 | 10.44 |
| 5. Miners Ditch | 1983 | 11,156 | 684.97 | .345 | .061 | 1182.57 | .596 | .106 | 625.33 | .315 | .056 | 138.33 | .070 | .012 | 66.54 | .034 | .005 | 52.27 | .026 | .005 | | 2750.01 | 1.367 | .247 | 2080.76 | 75.66 | 55.00 | 2.00 | 10.08 | .37 | 27.46 | 1.00 | 576.71 | 20.97 | | |
| 6. Browns Sierra | 4690 | 9,159 | 1590.34 | .339 | .174 | 444.50 | .095 | .049 | 1585.42 | .338 | .173 | | | | 41.38 | .009 | .005 | 197.31 | .042 | .022 | | 3858.95 | .823 | .421 | 767.51 | 19.85 | 651.94 | 16.89 | 267.19 | 6.92 | 165.05 | 4.80 | 1979.31 | 51.29 | 7.95 | .21 |
| 7. Meadow Valley | 1010 | 7,402 | 612.56 | .606 | .083 | 300.99 | .298 | .041 | 405.26 | .401 | .055 | 380.63 | .377 | .051 | 431.40 | .427 | .065 | 319.73 | .317 | .043 | | 2500.47 | 2.476 | .338 | 1529.66 | 61.18 | 565.45 | 22.61 | 38.76 | 1.55 | 119.03 | 4.76 | 247.57 | 9.90 | | |
| 8. Peach Growers | 1317 | 5,802 | | | | | | | | | | | | | | | | | | | | 2040.01 | 1.549 | .352 | 1346.41 | 66.00 | 448.80 | 22.00 | 20.40 | 1.00 | 20.40 | 1.00 | 204.00 | 10.00 | | |
| 9. Lasco | 2230 | 5,636 | 624.46 | .280 | .111 | 648.45 | .291 | .115 | 400.27 | .179 | .071 | | | | 62.95 | .028 | .011 | 28.41 | .013 | .006 | | 1764.54 | 791 | .313 | 1589.71 | 90.09 | | | .98 | .06 | 3.90 | .22 | 34.14 | 1.93 | 136.81 | 7.70 |
| 10. Slagger | 2680 | 6,136 | 250.58 | .094 | .041 | 483.46 | .180 | .079 | 378.15 | .141 | .062 | 141.89 | .053 | .023 | 85.58 | .032 | .014 | | | | | 1339.78 | .500 | .218 | 134.69 | 9.31 | 168.03 | 12.54 | 288.67 | 21.55 | | | 758.39 | 56.00 | | |
| Total | 28,216 | 120,036 | 10228.70 | .380 | .090 | 7642.32 | .284 | .067 | 10528.37 | .391 | .092 | 2613.93 | .097 | .023 | 2540.67 | .098 | .023 | 4826.93 | .180 | .042 | | 40522.95 | 1.436 | .338 | 16,879.86 | 41.66 | 4303.03 | 10.62 | 4170.87 | 10.29 | 1532.99 | 3.78 | 11,027.57 | 27.21 | 2608.63 | 6.44 |
| Total Used for Unit Costs | 26,899 | 114,234 | | | | | | | | | | | | | | | | | | | 38,482.92 | | | | | | | | | | | | | | |
| Percentages of Total Costs | | | 25.58 | | | 19.86 | | | 27.36 | | | 6.79 | | | 6.86 | | | 12.55 | | | 100.00 | | | | | | | | | | | | | | |
| Non-camp Projects | | | 542.23 | | | 405.15 | | | 558.15 | | | 138.52 | | | 139.24 | | | 256.02 | | | | | | | | | | | | | | | | | | |
| 11. Massack | 600 | 12,916 | 2002.49 | 3.337 | .155 | | | | | | | 568.29 | .947 | .044 | 68.25 | .114 | .005 | 436.48 | .727 | .034 | | 3075.51 | 5.126 | .238 | 1.533.71 | 53.12 | | | 86.11 | 2.80 | | | 403.51 | 13.12 | 952.18 | 30.96 |
| 12. Manuel | 1340 | 12,719 | | | | | | | | | | | | | | | | | | | | 574.79 | .544 | .053 | 168.81 | 25.02 | | | 16.46 | 2.44 | 283.98 | 42.08 | 205.54 | 30.46 | | |
| 13. N. Warners | 1135 | 6,703 | 462.87 | .408 | .069 | | | | | | | 299.90 | .264 | .045 | 171.99 | .152 | .026 | 314.97 | .278 | .047 | | 1249.73 | 1.101 | .186 | 812.50 | 65.01 | 8.00 | .64 | 100.00 | 8.00 | 4.23 | .34 | 325.00 | 26.01 | | |
| 14. Taylor Creek | 850 | 6,451 | 615.55 | .724 | .095 | | | | | | | 177.02 | .208 | .027 | 54.87 | .065 | .009 | 317.63 | .374 | .049 | | 1165.07 | 1.371 | .181 | 966.20 | 82.93 | | | 65.24 | 5.60 | | | 109.39 | 9.39 | 24.24 | 2.08 |
| 15. S. Warners | 800 | 5,330 | 412.91 | .516 | .077 | | | | | | | 255.93 | .320 | .048 | 48.30 | .060 | .009 | 259.86 | .325 | .049 | | 977.00 | 1.221 | .183 | | | 727.00 | 74.41 | 118.00 | 12.08 | | | 104.00 | 10.64 | 28.00 | 2.87 |
| 16. Mohawk | 880 | 6,642 | | | | | | | | | | 159.99 | .182 | .024 | 430.72 | .489 | .065 | 116.60 | .135 | .018 | | 709.31 | .806 | .107 | | | | | 153.57 | 21.65 | | | 555.74 | 78.35 | | |
| 17. Mabie | 394 | 4,000 | 19.04 | .048 | .005 | | | | | | | 12.00 | .030 | .003 | 75.33 | .191 | .019 | 25.48 | .067 | .007 | | 132.85 | .337 | .033 | 132.85 | 100.00 | | | | | | | 84.43 | 20.26 | 30.00 | 7.20 |
| 18. Burnam | 200 | 2,127 | 306.45 | 1.532 | .144 | | | | | | | 61.10 | .306 | .029 | 49.18 | .246 | .023 | | | | | 416.73 | 2.084 | .196 | 302.30 | 72.54 | | | | | | | | | | |
| Total | 6,099 | 56,887 | 3819.38 | .626 | .067 | | | | | | | 1534.23 | .292 | .031 | 898.64 | .172 | .018 | 1474.02 | .282 | .029 | | 8400.39 | 1.377 | .148 | 4,016.37 | 47.81 | 735.00 | 8.75 | 539.38 | 6.43 | 288.21 | 3.43 | 1787.61 | 21.27 | 1034.42 | 12.31 |
| Totals Used for Unit Costs | 5,319 | 50,245 | | | | | | | | | | | | | | | | | | | 7,726.20 | | | | | | | | | | | | | | |
| Percentages of Total Costs | | | 49.43 | | | | | | | | | 19.86 | | | 11.63 | | | 19.08 | | | 100.00 | | | | | | | | | | | | | | |
| Grand Total | 34,315 | 176,923 | 14048.01 | .437 | .085 | 7642.32 | .238 | .046 | 10528.37 | .328 | .064 | 4148.16 | .129 | .025 | 3539.31 | .110 | .022 | 6302.95 | .196 | .038 | | 48,923.94 | 1.426 | .277 | 20,896.23 | 42.71 | 5,038.03 | 10.30 | 4710.25 | 9.63 | 1821.20 | 3.72 | 12,815.18 | 26.19 | 3643.05 | 7.45 |
| Totals Used for Unit Costs | 32,118 | 164,479 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Percentages of Total Costs | | | 30.40 | | | 16.54 | | | 22.78 | | | 8.98 | | | 7.66 | | | 13.64 | | | 100.00 | | | | | | | | | | | | | | |



2-4-35

TABLE D-1
SUPERVISION

| Camp Projects | Gross Acres | Area Selection M.Hs. | Area Selection Cost | Mapping M.Hs. | Mapping Cost | Project Plan M.Hs. | Project Plan Cost | Boundary M.Hs. | Boundary Cost | Time Studies M.Hs. | Time Studies Cost | Maint. of Records M.Hs. | Maint. of Records Costs | Project Report M.Hs. | Project Report Cost | General Supervision | Totals M.Hs. | Totals Cost | Cost Per A. | Cost Per E.M.H. | Total E.M.H. for Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Soquel | 7880 | 186 | 152.82 | 578 | 359.00 | - | - | - | - | - | - | 1238 | 761.77 | - | - | 8.36 | - | 1281.95 | .163 | .042 | 30357 |
| 2-Pilgrim Creek | 4800 | 365 | 333.03 | 352 | 240.30 | 85 | 93.82 | 11 | 11.62 | 15 | 14.59 | 803 | 660.42 | 292 | 268.64 | 76.58 | - | 1699.00 | .354 | .098 | 17358 |
| 3-French Creek | 330 | - | 71.49 | - | 242.61 | - | 9.59 | - | 317.65 | - | 167.52 | - | 415.82 | - | - | 741.73 | - | 1966.41 | 5.959 | .129 | 15192 |
| 4-Logan Mt. | 1296 | 84 | 76.61 | 393 | 238.88 | 12 | 12.63 | 144 | 66.60 | 487 | 331.00 | 832 | 792.81 | - | - | - | 1952 | 1518.53 | 1.172 | .128 | 11838 |
| 5-Miners Ditch | 1983 | - | - | 360 | 202.16 | - | - | 22 | 12.49 | 136 | 121.87 | 530 | 348.35 | - | - | - | 1048 | 684.87 | .345 | .061 | 11156 |
| 6-Browns Sierra | 4690 | 65 | 50.71 | 1104 | 925.43 | 10 | 7.01 | 8 | 4.40 | 100 | 68.62 | 825 | 534.17 | - | - | - | 2112 | 1590.34 | .339 | .174 | 9159 |
| 7-Meadow Valley | 1010 | - | - | - | 204.30 | - | - | - | 17.04 | - | 69.22 | - | 128.23 | - | - | 193.77 | - | 612.56 | .606 | .083 | 7402 |
| 9-Lasco | 2230 | 28 | 26.06 | 194 | 149.07 | 40 | 33.04 | 36 | 26.13 | 104 | 79.32 | 357 | 310.84 | - | - | - | 749 | 624.46 | .280 | .111 | 5636 |
| 10-Slagger | 2680 | - | - | 228 | 134.95 | - | - | - | - | - | - | 187 | 115.63 | - | - | - | 415 | 250.58 | .094 | .041 | 6136 |
| Totals | 26,899 | - | 710.72 | - | 2696.70 | - | 156.09 | - | 455.93 | - | 852.14 | - | 4068.04 | - | 268.64 | 1020.44 | - | 10,228.70 | .380 | .090 | 114,234 |
| Percent of Total Costs | | - | 6.95 | - | 26.36 | - | 1.53 | - | 4.46 | - | 8.33 | - | 39.77 | - | 2.63 | 9.97 | - | 100.00 | - | - | - |
| Non Camp Projects | | | | | | | | | | | | | | | | | | | | | |
| 11-Massack | 600 | - | - | - | 9.82 | - | - | - | 2.53 | - | 214.34 | - | 193.90 | - | - | 1581.90 | - | 2002.49 | 3.337 | .155 | 12916 |
| 13-N. Warners | 1135 | 92 | 77.50 | 152 | 117.90 | - | - | 21 | 18.90 | 111 | 87.75 | 116 | 99.03 | 76 | 61.79 | - | 692 | 462.87 | .408 | .069 | 6702 |
| 14-Taylor Creek | 850 | - | - | - | 94.58 | - | - | - | 39.01 | - | 209.05 | - | 123.67 | - | - | 149.24 | - | 615.55 | .724 | .095 | 6451 |
| 15-S. Warners | 800 | 32 | 30.72 | 24 | 23.04 | - | - | 120 | 115.20 | 102 | 98.03 | 128 | 122.88 | 24 | 23.04 | - | - | 412.91 | .516 | .077 | 5330 |
| 17-Mabie | 394 | - | - | 56 | 36.66 | - | - | - | 68.57 | 30 | 18.00 | 41 | 9.62 | - | - | - | - | 132.85 | .337 | .033 | 4000 |
| 18-Burnam | 200 | 20 | 13.10 | 8 | 4.98 | - | - | 16 | 9.73 | 81 | 48.86 | 52 | 31.76 | - | - | 198.02 | 256 | 306.45 | 1.532 | .144 | 2127 |
| Totals | 3979 | - | 121.32 | - | 286.98 | - | - | - | 253.94 | - | 676.03 | - | 580.86 | - | 84.83 | 1929.16 | - | 3933.12 | .983 | .105 | 37,526 |
| Percent of Total Costs | - | - | 3.08 | - | 7.30 | - | - | - | 6.46 | - | 17.19 | - | 14.77 | - | 2.16 | 49.04 | - | 100.00 | - | - | - |
| Total Supervision | 30,878 | - | 832.04 | - | 2983.68 | - | 156.09 | - | 709.87 | - | 1528.17 | - | 4648.90 | - | 353.47 | 2949.60 | - | 14,161.82 | .459 | .093 | 151,760 |
| Percent of Total | - | - | 5.87 | - | 21.07 | - | 1.10 | - | 5.01 | - | 10.79 | - | 32.83 | - | 2.50 | 20.83 | - | 100.00 | - | - | - |

S
Stand Improvement

TABLE D-2
SUBSISTENCE

2-4-35

| Camp Projects | Net Food Cost | Misc. Equip. Cost | Labor Cooks, Etc. Cost | Trucking | Total Costs | Total Per EMH | Payroll Deductions | Net Loss | No. Meals Served | No. Meals Paid For | No. Meals No Charge | Costs Per Meal: Food | Labor | Misc. | Total | Net Loss Per Meal | Loss Per EMH | Total EMH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Soquel | 1632.71 | 371.15 | 2186.25 | 17.22 | 4207.33 | .139 | 3376.50 | 830.83 | 14,796 | 13,506 | 1290 | .110 | .148 | .026 | .284 | .034 | .027 | 30,357 |
| 2-Pilgrim Creek | 2334.00 | 2.35 | 1631.70 | 103.95 | *4162.37 | .240 | 2790.50 | 1371.87 | 11,627 | 11,162 | 465 | .201 | .140 | .017 | .358 | .108 | .079 | 17,358 |
| 3-French Creek | 2186.92 | - | 1685.40 | 167.20 | 4039.52 | .266 | 2705.25 | 1334.27 | 11,676 | 10,821 | 855 | .187 | .144 | .015 | .346 | .096 | .088 | 15,192 |
| 4-Logan Mt. | 1437.71 | 11.80 | 1159.55 | 47.82 | 2656.88 | .224 | 1611.50 | 1045.38 | 7167 | 6446 | 721 | .201 | .162 | .008 | .371 | .146 | .088 | 11,838 |
| 5-Miners Ditch | 1590.92 | - | 1293.00 | 109.00 | 2992.92 | .268 | 1810.25 | 1182.67 | 8738 | 7241 | 1497 | .182 | .148 | .013 | .343 | .092 | .106 | 11,156 |
| 6-Browns Sierra | 1046.61 | 2.03 | 777.45 | 39.41 | 1865.50 | .204 | 1421.00 | 444.50 | 5784 | 5684 | 100 | .181 | .141 | - | .322 | .072 | .049 | 9159 |
| 9-Lasco | 729.66 | 14.23 | 754.46 | 27.85 | 1526.20 | .271 | 877.75 | 648.45 | 3551 | 3511 | 40 | .205 | .212 | .013 | .430 | .183 | .115 | 5636 |
| 10-Slagger | 662.47 | 20.00 | 549.20 | 52.80 | *1308.91 | .213 | 825.45 | 483.46 | 3450 | 3302 | 148 | .192 | .159 | .028 | .379 | .129 | .079 | 6136 |
| Totals | 11,621.00 | 421.56 | 10,037.01 | 565.25 | 22,759.63 | .213 | 15,418.20 | 7,341.43 | 66,789 | 61,673 | 5,116 | .174 | .150 | .017 | .341 | .110 | .069 | 106,832 |
| Percentage Total Costs | 51.06 | 1.85 | 44.10 | 2.48 | 100.00 | | 67.74 | 32.26 | | 92.34 | 7.66 | 51.03 | 43.99 | 4.98 | 100.00 | | | |
| *Includes supervision charge | | | | | | | | | | | | | | | | .091 if all meals had been paid for. | | |

TABLE D-3
CAMP HOUSING

| Camp Projects | Gross Acres | Labor Const. M.H. | Labor Const. Cost | Moving M.H. | Moving Cost | Trucking M.H. | Trucking Cost | Materials Cost | Total Construction Cost | Cost Per A. | Cost Per EMH | Labor Maint. M.H. | Labor Maint. Cost | Purchase Consumable Supplies | Total Maintenance Costs Total | Per A. | EMH | Total Charges Costs M.H. | Total | Per A. | Per EMH | Total EMH For Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Soquel | 7880 | 1133 | 642.75 | 240 | 132.00 | - | 36.51 | 1228.60 | 2039.86 | .259 | .067 | 631 | 347.05 | 29.56 | 376.61 | .048 | .012 | 2004 | 2416.47 | .307 | .080 | 30357 |
| 2-Pilgrim Creek | 4800 | 1083 | 1001.42 | - | - | 22 | 12.10 | 1.45 | 1014.97 | .211 | .058 | 797 | 390.39 | 55.97 | 446.36 | .093 | .026 | 1902 | 1461.33 | .304 | .084 | 17358 |
| 3-French Creek | 330 | - | 1264.33 | - | - | - | - | 333.14 | 1597.47 | 4.841 | .105 | - | 141.95 | - | 141.95 | .430 | .009 | - | 1739.42 | 5.271 | .114 | 15192 |
| 4-Logan Mt. | 1296 | 1209 | 733.51 | 515 | 290.63 | - | 193.00 | 156.86 | 1374.00 | 1.060 | .116 | 293 | 134.90 | 7.82 | 142.72 | .110 | .012 | 2022 | 1516.72 | 1.170 | .128 | 11838 |
| 5-Miners Ditch | 1983 | 454 | 249.64 | 200 | 113.10 | 27 | 14.90 | 60.64 | 438.28 | .221 | .039 | 231 | 127.05 | 60.00 | 187.05 | .094 | .017 | 912 | 625.33 | .315 | .056 | 11156 |
| 6-Browns Sierra | 4690 | 1293 | 748.75 | 633 | 438.70 | 6 | 69.64 | 6.88 | 1263.97 | .270 | .138 | 386 | 218.92 | 102.53 | 321.45 | .069 | .035 | 2321 | 1585.42 | .338 | .173 | 9159 |
| 7-Meadow Valley | 1010 | - | 252.10 | - | 24.72 | - | - | 128.44 | 405.26 | .401 | .055 | - | - | - | - | - | - | - | 405.26 | .401 | .055 | 7402 |
| 9-Lasco | 2230 | 124 | 216.76 | 28 | 20.94 | - | 10.83 | 12.19 | 260.72 | .117 | .046 | 200 | 116.53 | 23.02 | 139.55 | .063 | .025 | 352 | 400.27 | .179 | .071 | 5636 |
| 10-Slagger | 2680 | 300 | 254.35 | - | - | 24 | 13.20 | 11.00 | 278.55 | .104 | .045 | 176 | 96.80 | 2.80 | 99.60 | .037 | .016 | 500 | 378.15 | .141 | .062 | 6136 |
| Totals | 26,899 | - | 5363.61 | - | 1020.09 | - | 350.18 | 1939.20 | 8673.08 | .322 | .076 | - | 1573.59 | 281.70 | 1855.29 | .069 | .016 | - | 10,528.37 | .391 | .092 | 114,234 |
| Percent Const. Costs | - | - | 61.84 | - | 11.76 | - | 4.04 | 22.36 | 100.00 | - | - | - | 84.82 | 15.18 | 100.00 | - | - | - | - | - | - | - |
| Percent Total Costs | - | - | 50.94 | - | 9.69 | - | 3.33 | 18.42 | 82.38 | - | - | - | 14.95 | 2.68 | 17.62 | - | - | - | 100.00 | - | - | - |